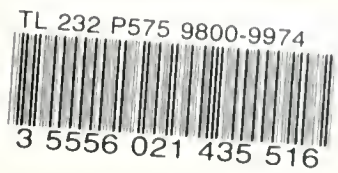


Photographs



**9800-9974
&
1600-1624**

Chicago Transit Authority
Equipment Engineering
& Maintenance Department
July, 1984



CHICAGO TRANSIT AUTHORITY

9800 AND 1600 SERIES BUS

CTA SPECIFICATION NO. 4900-81

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PERTINENT INFORMATION 9800 - 1600 SERIES BUS

A. BUS MANUFACTURER	FLYER INDUSTRIES, LTD.
BUS MODEL	Single Entrance & Exit D902
B. CHASSIS MODEL	10240
RECEIVED	1983-1984
Seating Capacity 175 Buses 9800-9974	50 Passengers
Seating Capacity 25 Buses 1600-1624	43 Passengers
C. DIMENSIONS	
1. Overall Length	
a. Over Body	39 ft. 7 in.
b. Over Bumpers	40 ft. 4 in.
2. Overall Width	
a. Over Body excluding mirrors	102.12 in.
b. Over body including mirrors extended	124 in.
c. Over tires front axle	*102.75 in.
d. Over tires rear axle	*102.75
	*At rubber fenders
3. a. Overheight (maximum)	122.5 in.
b. Overall Height (main roof line)	117.0 in.
4. Angle of Approach	9 Degrees
5. Breakover Angle	8 Degrees
6. Angle of Departure	8 Degrees
7. Doorway Clear Opening (Including Assist Handles)	
a. Front Entrance Door	Width 28.5 in. Ht. 81.5 in.
b. Exit Door	Width 22.0 in. Ht. 78.5 in.
8. Step Height From Ground	
a. Front Steps	13.5 in.
b. Rear Steps	14.0 in.
9. Interior Head Room (Center of Aisle)	
a. Front axle location	82 in.
b. Drive axle location	79.5 in.

C. DIMENSIONS (Cont'd.)

10. Aisle Width Between transverse seats (minimum)	23.5 in.
11. Floor Height Above Ground	
a. at front door	35.0 in.
b. at front axle	35.0 in.
c. at drive axle	37.0 in.
12. Minimum Ground Clearance	
a. Excluding axles	10.5 in.
b. Including axles	6.5 in.
13. Horizontal Turning Envelope	
a. Outside body turning radius (including bumper)	43 ft. 10.5 in.
b. Inside turning radius	38 ft. 7.5 in.
14. Wheelbase	284.75 in.
15. Overhang, Centerline of Axle over Bumper	
a. Front	7 ft. 1.9 in.
b. Rear	9 ft. 6.4 in.
16. Floor	
a. Interior length	35 ft. 11 in.
b. Interior width	8 ft. 1.25 in.
17. Seats	
a. Total maximum seating (Buses 9800-9974)	50 Passengers
b. Total maximum seating (Buses 1600-1624)	43 Passengers
c. Minimum knee to hip room	27.75 in.
d. Minimum foot room	9.15 in.

D. WEIGHT OF BUS (Full Complement)

	<u>Fuel, Oil, Water</u>	<u>At GVWR</u>
1. On front axle	7,230 lbs.	14,600 lbs.
2. On rear axle	16,930 lbs.	25,000 lbs.
3. Total	24,160 lbs.	39,600 lbs.

PERTINENT INFORMATION 9800-1600 SERIES BUS (Cont'd.)

E. ENGINE, MAIN

- | | |
|--------------------------------|-----------------------------------|
| 1. MANUFACTURER | D.D.A. |
| 2. Type | 2 Cycle |
| 3. Model Number | 6V71-TA |
| 4. No. of Cylinders | 6 |
| 5. Bore | 4.25 in. |
| 6. Stroke | 5.0 in. |
| 7. Displacement | 426 cu. in. |
| 8. Compression Ratio | 17:1 |
| 9. Injector Type & Size | N-60 |
| 10. Net S.A.E. Horsepower | 225 HP at 2100 RPM #2 Diesel Fuel |
| 11. Net S.A.E. Torque | 664 lb. ft. at 1000 RPM |
| 12. Crankcase Oil Capacity | |
| a. New engine dry | 10.75 gals. |
| b. New engine wet | 10.25 gals. |
| 13. Turbocharger, Make & Model | Airesearch T18A40 |
| 14. Maximum Speed, no load | 2100 + 150 RPM |
| 15. Maximum Speed, full load | 2100 RPM |
| 16. Speed at Idle | 550 RPM |
| 17. Speed at Fast Idle | 850 RPM |

F. TRANSMISSION

- | | |
|-----------------|--|
| 1. MANUFACTURER | ALLISON |
| 2. Type | Planetary - Torque Converter |
| 3. Model No. | V-73 |
| 4. Speeds | 3 Forward - 1 Reverse |
| 5. Gear Ratios | Forward 1st - 1.77:1
2nd - 1.21:1
3rd - 0.88:1
Reverse - 1.46:1 |

PERTINENT INFORMATION 9800 - 1600 SERIES BUS (Cont'd.)

F. TRANSMISSION (Cont'd.)

6. Shift Speeds

- | | |
|--------------|----------|
| a. 1st - 2nd | 19.9 mph |
| b. 2nd - 3rd | 26.7 mph |
| c. 3rd - 4th | 36.9 mph |

7. Oil Capacity (Transmission) including
Heat Exchanger

- | | |
|------------|-----------|
| a. New Dry | 8.5 gals. |
| b. New Wet | 6.25 gals |

G. ALTERNATOR

- | | |
|----------------------------|-----------------------|
| 1. MANUFACTURER | DELCO - REMY |
| 2. Type | 600 |
| 3. Model | 50 DN (part #1117793) |
| 4. Output at Idle | 225 amps |
| 5. Output at maximum speed | 300 amps |
| 6. Maximum warranted speed | 6300 RPM |
| 7. Speed at Idle | 1513 RPM |
| 8. Drive Type | Gear |

H. STARTER MOTOR

- | | |
|-----------------|---|
| 1. MANUFACTURER | DELCO - REMY |
| 2. Type | 450 |
| 3. Model | (40 MT with thermal cutout) (Part #1990339) |

I. AIR COMPRESSOR

- | | |
|---------------------|-----------------------|
| 1. MANUFACTURER | BENDIX - WESTINGHOUSE |
| 2. Type | TF 700 |
| 3. Capacity at Idle | 6.7 cfm @ 900 rpm |

PERTINENT INFORMATION 9800 - 1600 SERIES BUS (Cont'd.)

I. AIR COMPRESSOR (Cont'd.)

- | | |
|------------------------------|---------------------|
| 4. Capacity at maximum speed | 13.5 cfm @ 2000 rpm |
| 5. Maximum warranted speed | 3000 rpm |
| 6. Speed at idle | 500 rpm |
| 7. Drive type | Gear |

J. AXLE FRONT

- | | |
|-----------------------------|---------------------------|
| 1. MANUFACTURER | ROCKWELL |
| 2. Type | Rigid beam/reverse Elliot |
| 3. Model number | 17101WX |
| 4. Gross Axle Weight Rating | 14,600 lbs. |

K. AXLE REAR

- | | |
|-----------------------------|---------------|
| 1. MANUFACTURER | ROCKWELL |
| 2. Type | Full floating |
| 3. Model number | 59723WX408 |
| 4. Gross axle weight rating | 25,000 lbs. |
| 5. Differential gear ratio | 5.375:1 |

L. RETARDER

- | | |
|-----------------|---------------------------------|
| 1. Make & Model | TELMA FOCAL 155 - Code FC311185 |
|-----------------|---------------------------------|

M. STEERING POWER

- | | |
|-----------------|----------|
| 1. MANUFACTURER | SHEPPARD |
| 2. Model | 492 CQ-4 |

N. PUMP

- | | |
|-------------------------|--------------------------------------|
| 1. MANUFACTURER & MODEL | VICKERS F10-VCTM42-50-50-15-ME-LI-14 |
| 2. Type | Vane |
| 3. Relief Pressure | 1500 psi |

PERTINENT INFORMATION 9800 - 1600 SERIES BUS (Cont'd.)

0. BRAKES

1. Make of Fundamental Brake System BENDIX-WESTINGHOUSE S Cam
2. Brake Chamber Vendor's Size & Part No.
 - a. Front BW Type 24 104156
 - b. Rear Maxi Brake Type 30
S & W Dist. KSM 3060JCSW8302
3. Slack Adjusters Vendor's Type & part No.
 - a. Front
 - 1) Right S.A.B. 409-10202, Type 24
 - 2) Left S.A.B. 409-10203, Type 24
 - b. Rear
 - 1) Right S.A.B. 409-10023, Type 30
 - 2) Left S.A.B. 409-10024, Type 30
4. Brake Drums
 - a. Front
 - 1) MANUFACTURER ROCKWELL
 - 2) Part No. 6303647
 - 3) Diameter 14.5 in.
 - b. Rear
 - 1) MANUFACTURER ROCKWELL
 - 2) Part No. 6303177
 - 3) Diameter 14.5 in.
5. Brake Lining Identification
 - a. Front axle ABB-80-2240G2919
 - b. Rear axle ABB-80-2000G865
6. Brake Linings Per Shoe
 - a. Front 2
 - b. Rear 2
7. Brake Lining Widths
 - a. Front 6 in.
 - b. Rear 10 in.

PERTINENT INFORMATION 9800 - 1600 SERIES BUS (Cont'd.)

O. BRAKES (Cont'd.)

- 8. Brake Lining Lengths
 - a. Front 14.5 in.
 - b. Rear 14.5 in.
- 9. Brake Lining Thickness .75 in.
- 10. Brake Lining Area Per Axle
 - a. Front 322 sq. in.
 - b. Rear 549 sq. in.

P. COOLING SYSTEM

- 1. Radiator
 - a. MANUFACTURER LONG MANUFACTURING
 - b. Type Fin & Tube
 - c. Model No. 70-8117
 - d. Number of Tubes 220
 - e. Fins per inch 11 Fins
 - f. Fin thickness .009"
- 2. Total Cooling and Heating Capacity 23 gals.
- 3. Radiator Fan Speed Control Hydraulic Type
- 4. Surge Tank Capacity 24.5 qts.
- 5. Engine Thermostat Setting 180°F.
- 6. Overheat Alarm Setting 210°F

Q. ENGINE AIR CLEANER ASSEMBLY

- 1. MANUFACTURER DONALDSON
- 2. Model ECG - 2002

PERTINENT INFORMATION 9800 - 1600 SERIES BUS (Cont'd.)

R. TIRES

- | | |
|-----------------|---|
| 1. MANUFACTURER | GOODYEAR |
| 2. Type | City Cruiser - regroovable |
| 3. Size | 12.5x22.5 |
| 4. Ply | Nylon sidewall - 10 ply tread - 12 ply - Load Range G |

WHEELS

- | | |
|-----------------|----------------------|
| 1. MANUFACTURER | GOODYEAR |
| 2. Size | 22.5x8.25 |
| 3. Type | Tubeless hub piloted |

WINDSHIELD WIPER MOTORS

- | | |
|-----------------|-------------|
| 1. MANUFACTURER | SPRAGUE |
| 2. Model | M-583-3-130 |

AIR DRYER

- | | |
|-----------------|---------------------|
| 1. MANUFACTURER | BENDIX-WESTINGHOUSE |
| 2. Model | System Guard 286962 |

AMPLIFIER

MOBIL PAGE

- | | |
|-----------------|--------------------------------------|
| 1. MANUFACTURER | MIDWEST ELECTRONICS INDUSTRIES, INC. |
| 2. Model | 470G |

FUEL TANK

- | | |
|-----------------|-------------------------|
| 1. MANUFACTURER | FLYER INDUSTRIES, LTD. |
| 2. Capacity | Usable 125 gals. (U.S.) |

Bus Photos with Component IdentificationPhoto #8 Front of bus headlamp door open

- (1) Washer reservoir filler pipe
- (2) Tow eyes

Photo #25 Right rear corner of bus

- (3) Engine air cleaner assembly

Photo #29 Transmission area and engine bulkhead

- (4) No motion sensor
- (5) Mini generator for speedometer
- (6) Ping tank 150 psi safety valve
- (7) Air compressor ping tank
- (8) Master battery disconnect switch
- (9) Transmission accumulator pressure gauge
- (10) Transmission accumulator

Photo #30 Transmission

- (11) Transmission oil filler pipe
- (12) Transmission
- (13) Bennet shifter
- (14) Transmission oil heat exchanger
- (15) Neutral safety switch
- (16) Transmission oil filter
- (17) Fuel heat line

Photo #32 Bus Main Electrical Control Panel

- (18) Fuel heater lockout relay
- (19) Night/Park relay Bus #2
- (20) Interlock relay
- (21) Defroster motor relay
- (22) Horn relay
- (23) Nite/Park relay Bus #3
- (24) Run/Night Bus #3 relay
- (25) Stepwell heat blower relay
- (26) Standstill relay
- (27) Stop light relay
- (28) 15A. C.B. Destination sign motor fuel heater controls
- (29) 10 A-C.B. Transmission controls, engine run controls, generator relay and light, regulator relay, heater relay
- (30) 15 A-C.B. Entrance stepwell lights, side console service light
- (31) 20A-C.B. Brake lights, bulb outage module
- (32) 30 A-C.B. Turn signals, horn
- (33) 40A-C.B. Defroster Motor
- (34) 30 A-C.B. Run/Night Bus #3
- (35) 15A. C.B. Route box lights, side destination sign lights
- (36) 20 A-C.B. Night/Park Bus #2
- (37) 15 A-C.B. Farebox light provision

Photo #32 (continued)

- (38) 15A.-C.B. Drivers light, communications provision power on relay
- (39) 15A.-C.B. Speedometer and air gauge lights, instrument panel lights, front destination sign light aisle light controls, night/park relays
- (40) 15A.-C.B. Taillights, license plate light, marker lights
- (41) 10A.-C.B. Spare
- (42) 15A.-C.B. Entrance stepwell lights relay, exit stepwell lights
- (43) 15A.-C.B. Starter relay, ether injector relay, communication provision signal, P.A. system, Run/Night relays
- (44) 15A.-C.B. Door controls, interlocks
- (45) 10A.-C.B. Passenger chime, stop request lights and relay
- (46) 10A.-C.B. Speedometer, Drivers warning lights and buzzer
- (47) 15A.-C.B. Fuel heater controls, defroster controls
- (48) 15A.-C.B. Brake lights, parking brake light, engine fast idle
- (49) 20A.-C.B. Entrance stepwell heat blower
- (50) 25A.-C.B. Headlights
- (51) Bridge Rectifier assemblies
- (52) Transmission neutral off module
- (53) Spare relay
- (54) Fuel heater timer relay
- (55) Passenger stop request relay
- (56) Exterior bulb outage module

Circuit Breaker Identification Color Dot Code

White	10A.
Blue	15A.
No Dot	20A.
Glossy Black	25A.
Red	30A.
Green	40A.

Photo #33 Bus Main electrical control panel

- (57) Door control micro switch
- (58) Service light switch
- (59) Dump valve
- (60) Service light

Photo # 39 Bus left rear electrical control box compartment

- (61) Control box compartment service light switch
- (62) 45A.-C.B. Fuel heater
- (63) 60A.-C.B. Feed to master run switch
- (64) 100A.-C.B. Right hand blower motor, both motors in low speed
- (65) 100A.-C.B. Left hand blower motor
- (66) 100A.-C.B. Battery Bus #2 Rear control box
- (67) 100A.-C.B. Battery Bus #4 Drivers side main electrical control
- (68) Interlock brake pressure regulator valve
- (69) Interlock brake solenoid valve
- (70) Schrader valve for checking adjusted brake interlock pressure
- (71) Retarder relay box
- (72) Coolant booster pump motor
- (73) Coolant booster pump
- (74) Coolant shut off valves to heater and defroster
- (75) Voltage regulator
- (76) Retarder circuit box
- (77) No generator charging
- (78) Starter cutout module
- (79) 20A.-C.B. Regulator and alternator field
- (80) 20A.-C.B. Left side fluorescent lights
- (81) 20A.-C.B. Coolant booster pump motor
- (82) 40A.-C.B. Starter solenoid
- (83) 10A.-C.B. Engine compartment service lights

Photo #39 (continued)

- (84) 15A.-C.B. Rear control box service lights, starter relay, ether injector relay, communications provision signal, heater relay, engine run controls, no generator relay and light, regulator relay
- (85) 25A.-C.B. Run/Night #2
- (86) 20A.-C.B. Ether injector mag. valve, heating controls
- (87) 20A.-C.B. Left side fluorescent lights
- (88) 20A.-C.B. Right side fluorescent lights
- (89) 20A.-C.B. Right side fluorescent lights
- (90) 10A.-C.B. Fuel heater indicator light
- (91) 15A.-C.B. Spare
- (92) 30A.-C.B. Communication provision
- (93) 10A.-C.B. Retarder controls
- (94) 10A.-C.B. Back up lights and alarm
- (95) 15A.-C.B. Low coolant device engine compartment coolant temperature gauge, air dryer
- (96) 10A.-C.B. Transmission controls-engine run controls, no generator relay and light, regulator relay, heater relay
- (97) Fuel heater relay
- (98) Right and left hand low speed blower motors relay
- (99) Left hand high speed blower motor relay
- (100) Right hand high speed blower motor relay
- (101) Starter relay
- (102) Left hand fluorescent light relay
- (103) Run/night Bus #2 relay
- (104) Coolant booster pump motor relay
- (105) Neutral safety relay
- (106) Regulator relay
- (107) Ether injector relay
- (108) Left hand fluorescent lights relay
- (109) Right hand fluorescent lights relay

Photo #39 (continued)

- (110) Right hand fluorescent lights relay
- (111) Heating control relay
- (112) Bridge rectifiers

Photo #42 Engine Installed

- (113) Turbo charger
- (114) Secondary fuel filter
- (115) Primary fuel filter
- (116) Engine compartment light service switch
- (117) Rear start starter button
- (118) Front run, off, rear run switch
- (119) Coolant temperature gauge
- (120) Engine oil pressure gauge
- (121) Remote quick disconnect air chuck
- (122) Engine shut down mag valve
- (123) Engine fast idle mag valve
- (124) Low engine oil pressure switch in oil manifold
- (125) Temperature indicator switch
- (126) 105° blower motor control coolant switch
- (127) Hot engine warning switch
- (128) Mechanical prime fuel pump
- (129) Engine oil level dip stick
- (130) Engine oil filler pipe

Photo #53 Heating system thermostat in floor heat duct

- (131) Thermostat bus heat control

Photo #66 Drivers area including barrier

- (132) Pull cord chime switch
- (133) P.A. mike
- (134) P.A. system ampplier

9800 Series

Photo #76 Drivers platform

- (135) Left side windshield wiper motor
- (136) Brake application valve pedal
- (137) Accelerator valve pedal
- (138) Defroster blower motor

Photo #77 Left side heater box assembly

- (139) Exit door sensitive edge alarm bell
- (140) Defroster coolant valve control rod

Photo #82 Defroster assembly electrical compartment

- (141) Right hand wiper motor
- (142) Retarder control and dash light 15 psi pressure switch
- (143) Retarder control and dash light 10 psi pressure switch
- (144) Retarder control and dash light 7 psi pressure switch
- (145) Retarder control and dash light 4 psi pressure switch
- (146) Turn indicator and hazard light flasher unit
- (147) Defroster blower motor speed resistor
- (148) Front axle stop light switch
- (149) Park brake low air pressure warning switch

Photo #83 Defroster unit access cover removed

- (150) Defroster assembly coolant core
- (151) Defroster air filter

Photo #84 Drivers platform area and side console

- (152) Drivers vent control handle
- (153) Headlight dimmer switch
- (154) Radio emergency alarm switch

Photo #85 Ceiling drivers area

- (155) Passenger stop chime
- (156) Radio head mounting bracket

Photo #87 Drivers Side Console

- (157) Fuel line heater (five minute) over ride switch
- (158) Engine fast idle switch
- (159) Drivers light switch
- (160) Fluorescent light switch coach interior
- (161) Five minute fuel line heater switch
- (162) Hazard light switch
- (163) Starter control key switch
- (164) Starter button
- (165) Master run switch
- (166) Park brake apply and release valve
- (167) Park brake emergency release valve

Photo #88 Front Destination Sign Door Closed

- (168) Sign curtain up/down control switch
- (169) Exit door master switch

Photo #89 Front Destination Sign Door Open

- (170) Sign curtain motor

Photo #90 Left Side Front Destination Sign Compartment

- (171) Driver's upper vent control rod

Photo #91 Left Side Instrument Panel

- (172) Left side windshield wiper control valve
- (173) Right side windshield wiper control valve
- (174) Windshield washer control valve
- (175) Front and Rear Brake Air Reservoir Gauge
- (176) Left turn indicator light
- (177) Hot engine warning light
- (178) Low engine oil pressure warning light
- (179) Low air warning light
- (180) Fuel heater indicator light
- (181) Stop light indicator



Photo #92 Right Side Instrument Panel

- (182) Retarder stage tell tale lights
- (183) Exit door emergency opening alarm
- (184) Low coolant alarm light
- (185) Not generating alarm light
- (186) Exit door open indicator light
- (187) Park brake applied tell tale light
- (188) Right turn indicator light
- (189) Dimmer switch for instrument panel lights
- (190) Speedometer
- (191) Transmission shift speed indicator
- (192) Defroster heater control levers

Photo #93 Side Destination Sign

- (193) Right side passenger chime pull cord switch

Photo #97 Entrance Door Operating Equipment Compartment

- (194) Emergency air release valve
- (195) Door operating motor

Photo #98 Stepwell Heat Blower Motor

- (196) Motor entrance door stepwell

Photo #100 Exit Door Equipment Compartment Door Closed

- (197) Light for passengers indicating doors unlocked
- (198) Passenger stop switch

Photo #101 Exit Door Compartment Door Open

- (199) LS 1 switch
- (200) LS 2 switch
- (201) LS 3 switch
- (202) LS 4 switch
- (203) LS 5 switch
- (204) Emergency opening



9800 Series

Photo #105 Engine comp. before engine installation

- (205) Coolant surge tank
- (206) Engine luberefiner by pass oil filter
- (207) Engine back up alarm horn

Photo #107 Back Side of Engine

- (208) Starter
- (209) Engine crankcase breather

Photo #110 Engine Installed

- (210) Power steering oil reservoir

Photo #114 Close up Engine Installed

- (211) Engine fast Idle Control Valve
- (212) Engine shut down cylinder
- (213) Engine accelerator air slave cylinder
- (214) Engine fast idle stabilizer cylinder

Photo #115 Close Up Engine Governor

- (215) Engine cold start temperature sensor
- (216) Engine cold start ether tube
- (217) Air compressor fresh air pick up tube

Photo #118 Close Up Area Behind Rear Control Box

- (218) Ether cannister
- (219) Ether injection mag valve

Photo #119 Transmission Bottom View

- (220) Transmission pneumatic support

Photo #120 Close Up Engine Bottom

- (221) Engine coolant fan control vernatherm valve

9800 Series

Photo #197 Bus Interior Ceiling Wire Harnesses

(222) P.A. system wire harness

(223) Ceiling light wires

Photo #214 Coolant Piping for Heaters in Air Duct

(224) Wall seat track taping plates

(225) Coolant pipes

Photo #215 Coolant Pipe for Heaters Installed

(226) Radio harness conduit to radio box

Photo #226 Left Front Interior at Floor Level

(227) Warning buzzer for low air, hot engine, and engine low oil pressure

(229) Communication speaker

Photo #236 Rear Axle Installation

(229) Air dryer

(230) 150 psi pressure safety valve

Photo #238 Left Rear Forward View Rear Axle

(231) Rear axle stabilizer bar

Photo #240 Air Valve Rear Axle Forward Bulkhead

(232) Double check valve

(233) Rear brakes stop light switch

(234) Double check valve

(235) Air quick release valve interlock brake

(236) Service brake relay quick release valve

(237) Park brake quick release valve

(238) Left side rear axle leveling valve

(239) Right side rear axle leveling valve

Photo #243 Rear Axle Rear View

(240) Retarder

9800 Series

Photo #245 Front Axle Front View Installed

- (241) Fresh air inlet for defroster heater assembly
- (242) Windshield washer solvent reservoir
- (243) Sheppard power steering unit
- (244) Front axle stabilizer bar

Photo #251 Front View Right Side Front Axle

- (245) Front axle caster adjusting rod
- (246) Power steering pressure check point
- (247) Front axle leveling valve

Photo #254 Front Axle Area Floor

- (248) Front brake interlock quick release valve
- (249) Double check valve

Photo #256 Front Axle Area Rear Bulkhead

- (250) Quick release relay valve for service brake

Photo #261 Left Front Floor View

- (251) Defroster coolant line drain cocks

Photo #262 Floor Board Front Underside View

- (252) Air throttle reservoir
- (253) Fare box terminal junction box
- (254) Horns

Photo #263 Emergency Park Brake Release Reservoir

- (255) Emergency park brake release reservoir
- (256) Steering column right angle transfer box
- (257) Steering shaft from transfer box to Sheppard Unit

9800 Series

Photo #264 Emergency Park Brake Release Area

- (258) Compressed air strainer

Photo #266 Air Reservoirs

- (259) Air reservoir check valves
- (260) Low air pressure warning alarm switch
- (261) Pressure protection valve
- (262) Wet tank or air supply reservoir
- (263) Rear brake air reservoir
- (264) Front brake air reservoir
- (265) Accessories reservoir
- (266) Flex air line from air dryer

Photo #267 Air Reservoirs Before Skirt Panel Installation

- (267) Air dryer purge tank

Photo #268 Air Reservoirs Rear to Front

- (268) Heater motor (main heater)

Photo #271 Main Heater Box Door Open

- (269) Vapor water valve
- (270) Heater core drain cock
- (271) Heater motor speed control resistors
- (272) Heater coolant core

9000 SERIES

BUS PHOTOS

Photo numbers regarding different stages of construction

A. Photo numbers 1 thru 43

These photos pertain to completed bus exterior

B. Photo numbers 49 thru 103

These photos pertain to complete bus interior

C. Photo numbers 104 thru 120

Engine and engine compartment before and after engine installation

D. Photo numbers 121 thru 138

Roof structure

E. Photo numbers 139 thru 159

Chassis structure and floor boards

F. Photos numbers 160 thru 190

Bus structure sub assemblies and assembly to complete bus structure

G. Photo numbers 191 thru 229

Interior upfitting including installation of insulation coolant piping for heater and defroster, wire harnesses and insulation retainer at side wall

H. Photo numbers 230 thru 243

Rear axle and rear axle brake valves

I. Photo numbers 244 thru 260

Front axle and front axle brake valves

J. Photo numbers 261 thru 271

Air reservoirs, washer reservoir, radio box and steering column right angle transfer box

K. Photo numbers 272 thru 284

Instrument panel front and rear before installation
Stepwells before step treads
Removal of fiber glass front end from completed bus

A. Photos 1 thru 48

Bus exterior completed

These photos pertain to completed bus exterior

1. Right oblique view front to rear
2. Left oblique view front to rear
3. Right side view
4. Left side view
5. Right oblique view rear to front
6. Left oblique view rear to front
7. Front full view
8. Front bottom view
9. View left side windshield recessed at top
10. Front upper view
11. Rear view
12. Engine installed
13. Entrance door closed
14. Entrance door opened
15. Drivers area, and stepwell view entrance door opened
16. Entrance door stepwell
17. Fuel tank filler door closed
18. Fuel tank filler door open
19. Exit door closed
20. Exit door opened
21. Stepwell and one seat installation exit door opened
22. Exit door stepwell
23. Hubodometer installation right rear wheel hub
24. Engine air cleaner, transmission, and battery access doors closed
25. Engine air cleaner door open
26. Battery compartment without batteries
27. Batteries pulled out on battery tray
28. Batteries in stowed position and trans door open
29. Trans view with extension bumper installed
30. Trans view without extension bumper installed
31. Main electrical compartment door closed
32. Main electrical compartment door open with identification of components
33. Main electrical compartment door open
34. Radio box compartment access door closed
35. Radio compartment access door open
36. Close up view of radio box interior
37. Cooling system surge tank door open
38. Rear electrical control box and radiator access doors open
39. Electrical control box view with box in stowed position and old style retainers
40. View showing components in control box compartment
41. Control box electrical component identification
42. Engine installed and component identification
43. Side window closed
44. Side window with forward and rear panels open. Hopper windows also open
45. Close up with slide and hopper panels open
46. Angled prospective of window with slide and hopper panels open
47. Emergency opening of window assembly
48. Angled prospective of window in emergency opening position

5830 SERIES

B. Photos 49 thru 103

These photos pertain to complete bus interior

49. Coach and car seating rear to front
50. Coach and car seating front to rear
51. American seating rear to front
52. American seating front to rear with emphasis on seat pedestals
53. Heat thermostat exposed in heat duct
54. Heat thermostat behind expanded metal grill in heat duct
55. Lounge seat close up in natural position
56. Lounge seat in raised position
57. Close up view lounge seat in raised position
58. Ceiling vent hatch installed
59. Right front wheel house seat
60. Left front wheel house seat
61. Right rear wheel house seat
62. Left rear wheel house seat
63. Right rear corner of lounge seat close out panel
64. Side window emergency opening instructions
65. Typical air transfer duct over wheel housing
66. Drivers seat and P.A. System amplifier installed on drivers barrier
67. American seating rear to front 43 passenger configuration
68. American seating front to rear 43 passenger configuration
69. Single seats front to rear right side of bus
70. Exit door forward to Modesty Panel with 43 passenger configuration
71. Rear to front right side of first cross seat
72. Rear to front full length right side 43 passenger configuration
73. Exit stepwell forward right side seats
74. Close up view exit door modesty panels
75. Full view forward modesty panel exit door
76. Right side rear to front of number six and seven single passenger cross seats
77. Exit door modesty panels
78. Left side cross seats front to rear
79. Drivers seat, left side wiper motor, brake and accelerator pedals and defroster motor
80. Defroster motor and exit door sensitive edge alarm bell
81. Defroster electrical box, defroster core and fire extinguisher access doors closed
82. Defroster electrical box and fire extinguisher access doors open
83. Defroster assembly with access cover off exposing coolant core and filter
84. Drivers area from entrance door minus drivers seat
85. Crown panel ceiling to left of driver showing passenger stop chime, bracket for radio head, drivers coat hook and passenger chime pull cord switch
86. Drivers barrier from passenger side
87. Drivers console, with park brake apply valve button and emergency release of park brake button
88. Front destination sign compartment door closed
89. Front destination sign compartment door open
90. Left side of front destination sign compartment

9800 SERIES

Bus Photos continued

91. Drivers area exposing left side of instrument panel
92. Drivers area exposing right side of instrument panel and defroster controls
93. Side destination sign, passenger pull cord chime switch and entrance door equipment compartment access door closed
94. Exit door equipment compartment access door open
95. Exit door modesty panel
96. Entrance door stepwell lights and mirror
97. Entrance door operating equipment, identification
98. Entrance door stepwell heat booster blower
99. Exit door operating equipment compartment access door closed and stepwell light.
100. Close up view of exit door equipment access door closed and stepwell light
101. Exit door equipment compartment door open with component identification
102. Exit door touch bars
103. Exit door stepwell with tread installed

9800 SERIES

Bus Photos continued

C. Photos 104 thur 120 - Engine and engine compartment before and after engine installation

- 104. Partial view engine compartment
- 105. Full view engine compartment
- 106. Left bank and partial front view of engine
- 107. Back side of engine before installation
- 108. Radiator view of engine assembled in cradle and on dolly for installation
- 109. Left front of engine and radiator
- 110. Complete view of engine installed in bus before exhaust pipe and air cleaner being installed
- 111. Transmission and rear of engine
- 112. Transmission view before extension bumper being installed
- 113. Full view engine installed with all components attached
- 114. Engine installed with oil pressure and coolant temperature gauge installed
- 115. Close up of engine Turbo Charger and engine governor
- 116. Close up of engine governor, mechanical fuel prime pump and left bank valve cover
- 117. Close up of oil and temp gauges
- 118. Lubrefiner by pass oil filter and engine cold start either injector valve with ether reservoir
- 119. Transmission oil pan, Bennet shifter and back up alarm
- 120. Engine oil pan, full flow oil filter and engine cradle

Bus photos continued

D. Photos 121 thru 138- Roof Structure

- 121. Welding fixture for roof structure
- 122. Welded roof structure exterior view right side
- 123. Welded roof structure interior view
- 124. Welded roof structure exterior view showing reinforcement at exit door
- 125. Welded roof structure exterior view left side
- 126. Roof structure in fixture for riveting of roof panels
- 127. Roof structure in fixture showing installed insulation in roof bow
before roof panel installation
- 128. Roof structure in fixture with all insulation installed prior to
panel installation
- 129. Roof panels being riveted
- 130. Underside of roof structure in panel installation fixture
- 131. Exterior welding of roof bow at crown area
- 132. Interior welding of roof bow at crown area
- 133. Interior welding of roof bow at crown in exit door area
- 134. End bow interior welding
- 135. Angle view roof bow welding exterior right side
- 136. Close up view exterior welding roof bow right side
- 137. Welded roof structure in storage rack prior to insulating and
roof panel installation
- 138. Completed roof structure in storage rack

Bus Photos continued

E. Photos 139 thru 159-Chassis structure and floor boards

- 139. Rear section of main rail chassis assembly
- 140. Front section of main rail chassis structure assembly
- 141. Completed chassis structure before undercoating and floor board installation
- 142. Chassis structure hoisted to dip in cleaning tank
- 143. Chassis structure being submerged in cleaning solution prior to undercoating
- 144. Chassis structure in booth for prime paint and undercoating
- 145. Chassis structure undercoated
- 146. Floor boards being installed on chassis structure
- 147. Underside view of chassis after floor board installation
- 148. Completed floor board installation on chassis
- 149. Floor boards and drivers platform installed
- 150. Top view floor board installation rear to front
- 151. Underside structure view
- 152. Underside structure view radio box installed
- 153. Front end chassis structure
- 154. Heater box being installed in chassis
- 155. Chassis structure upside down showing air reservoirs including air dryer purge tank
- 156. Chassis structure upside down showing heat ducts and heater blower motor
- 157. Chassis structure upside down showing heat ducts and air reservoir
- 158. Chassis structure front axle area
- 159. Chassis structure front axle area

Bus Photos continued

F. Photos 160 thru 190 - Bus structure sub assemblies and assembly to complete bus structure

- 160. Front end substructure
- 161. Front end fiber glass shells before installation
- 162. Front end before fiber glass shell installation
- 163. Front end after fiber glass shell installation
- 164. Rear substructure completed assembly
- 165. Fabricating of rear substructure assembly
- 166. Rear substructure assembly installed
- 167. Side view substructure assembly installed
- 168. Engine air cleaner separator installed in rear substructure
- 169. Muffler location in rear substructure
- 170. Muffler installed in rear substructure
- 171. Engine compartment without engine
- 172. Side wall structures in storage rack
- 173. Welding roof onto side structure
- 174. Bus structure completely welded
- 175. Welding of side structure to roof
- 176. Angle view of side structure welded to roof
- 177. Welding of side structure to roof in fixture with clamps required to hold in place
- 178. Side structure post welding to roof
- 179. Exit door header welding to side structure
- 180. Close up view exit door header welded in position
- 181. Exterior view side wall insulation at wheel well
- 182. Side wall panel being installed
- 183. Bottom outside panels installed left side
- 184. Side wall panels installed at fuel tank filler opening
- 185. Front fiber glass shell installed
- 186. Interior view floor level with fiber glass front installed
- 187. Interior fiber glass shell for rear window and corner installation
- 188. Interior view side wall structure over left rear wheel housing
- 189. Interior right side structure before exit door
- 190. Interior right side structure after entrance door

Bus Photos continued

G. Photo 191 thru 229 - Interior upfitting including installation of insulation coolant piping to heater and defroster, wire harnesses and insulation retainer

191. Right side front interior with entrance door operating equipment compartment and wire harness
192. Interior of roof line with wire harness and window outside panels installed
193. Interior entrance door operating equipment area
194. Left side interior at drivers window with wire harness
195. Interior at roof line with wire harness for ceiling lights and P.A. system speakers
196. Interior at roof line post and roof bow welding
197. Ceiling and side walls, front to rear, before installation of insulation
198. Close up of exit door operating equipment compartment
199. Ceiling and side wall rear to front before installation of insulation
200. Interior post and roof bow welding at center stationary window left side of bus
201. Close up view of same area as Photo 200
202. Right side interior before insulation full length view
203. Left side rear lower side wall interior
204. Right side rear lower side wall at wheelhousing
205. Left side wall lower interior at center stationary glass area
206. Left side rear lower side wall at wheelhousing
207. Left side of stationary window lower diagonal supports
208. Close up left rear lower side wall between wheelhousing and lounge seat
209. Close up right rear lower side wall between wheelhousing and lounge seat
210. Front wheelhousing area lower side wall
211. Lower side wall exit door to rear of bus
212. Coolant lines, being installed over front wheelhousing, for defroster
213. Interior of bus front to rear with insulation installed.
214. Heater and defroster coolant line installation left side of bus
215. Coolant lines for main heater and defroster installed including wire harness and conduit for radio cable, and antenna.
216. Coolant lines and wire harness in area between wheelhousing and lounge seat riser
217. Floor covering installed from front to rear
218. Heating system thermostat installed at return air duct location
219. Ceiling panels and light fixture installation rear to front of bus
220. Close up view radio box harness conduit duct over left front wheelhousing
221. Drivers platform area with left wiper motor, drivers outside air vent, accelerator and brake pedals including defroster core coolant lines
222. Partial view drivers platform and defroster unit assembly
223. Close up defroster blower motor, exit door sensitive edge alarm bell and air throttle air cylinder
224. Close up view of pedals, wiper motor and drivers vent
225. Communication speaker
226. Door opening valve, radio emergency alarm switch, air dump valve, low air, engine low oil pressure, and overheated engine alarm buzzer along with communication speaker
227. Right side wiper motor
228. Entrance door operating motor
229. Exit door operating equipment installed

Bus Photos continued

II. Photos 230 thru 243 - Rear axle and rear axle brake valves.

- 230. Rear axle in fixture for suspension beam installation
- 231. Retarder view drive shaft end
- 232. Side view retarder
- 233. Front view rear axle installed
- 234. Rear axle area air valves
- 235. Rear axle brake chambers and air dryer
- 236. Rear axle right side front view and air dryer
- 237. Rear axle right side angle view
- 238. Rear axle left side suspension beam installation bolts and stablizer bar
- 239. Rear axle right side suspension beam installation bolts and stablizer bar
- 240. Rear axle brake valves axle installed
- 241. Rear axle brake valves with right side suspension beam
- 242. Rear axle brake valves without axle installed
- 243. Retarder with axle installed

Bus Photos continued

I. Photos 244 thru 260- Front axle and front axle brake valves

- 244. Front axle assembly front view
- 245. Front axle installed
- 246. Front axle rear view right side
- 247. Front axle front view right side
- 248. Front axle right side angle view of clamping to suspension beam
- 249. Front axle right side front view
- 250. Front axle with caster adjusting rod, Sheppard steering gear and drag link
- 251. Sheppard steering gear, Caster adjusting rod, axle clamps for retention of suspension beam
- 252. Front axle with air valves
- 253. Front axle with air valves and Pitman arm
- 254. Front axle brake and shuttle valve
- 255. Front axle brake and shuttle valve including quick release relay valve
- 256. Front axle area showing suspension bellows and quick release relay valve
- 257. Front axle area suspension bellows and right side shock bracket
- 258. Front axle with drag link and tie rod
- 259. Front axle left side front view
- 260. Front axle left side rear view

9800 SERIES

Bus Photos continued

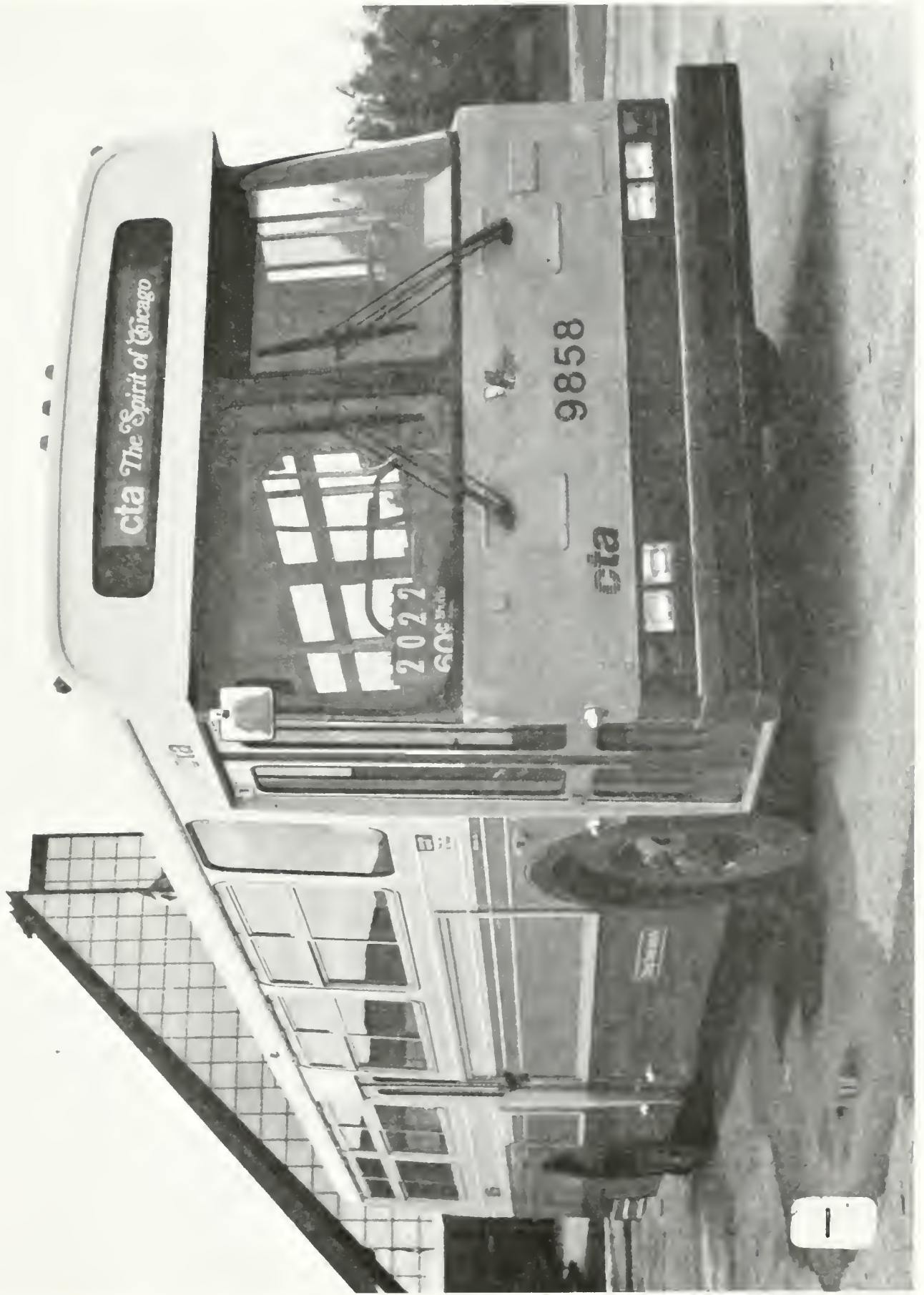
J. Photos 261 thru 271-Air reservoirs, washer reservoir, radio box and steering column right angle transfer box

- 261. Park brake emergency release air reservoir and windshield washer solvent reservoir
- 262. Air throttle air reservoir, fare box electrical junction box and defroster/heater air inlet
- 263. Park brake emergency release air reservoir, right angle steering column transfer box and drive shaft to Sheppard steering gear
- 264. Park brake emergency release air reservoir and air strainer
- 265. Bus air reservoirs, wet tank, front brake, rear brake and accessory
- 266. Air reservoirs with low air pressure indicator switches and 75 psi pressure protection valve
- 267. Air reservoirs as viewed from outside of bus before skirt panel installation
- 268. Air reservoirs from under side of bus
- 269. Air reservoirs with check valves
- 270. Radio box installed
- 271. Main heater box doors open

9800 SERIES

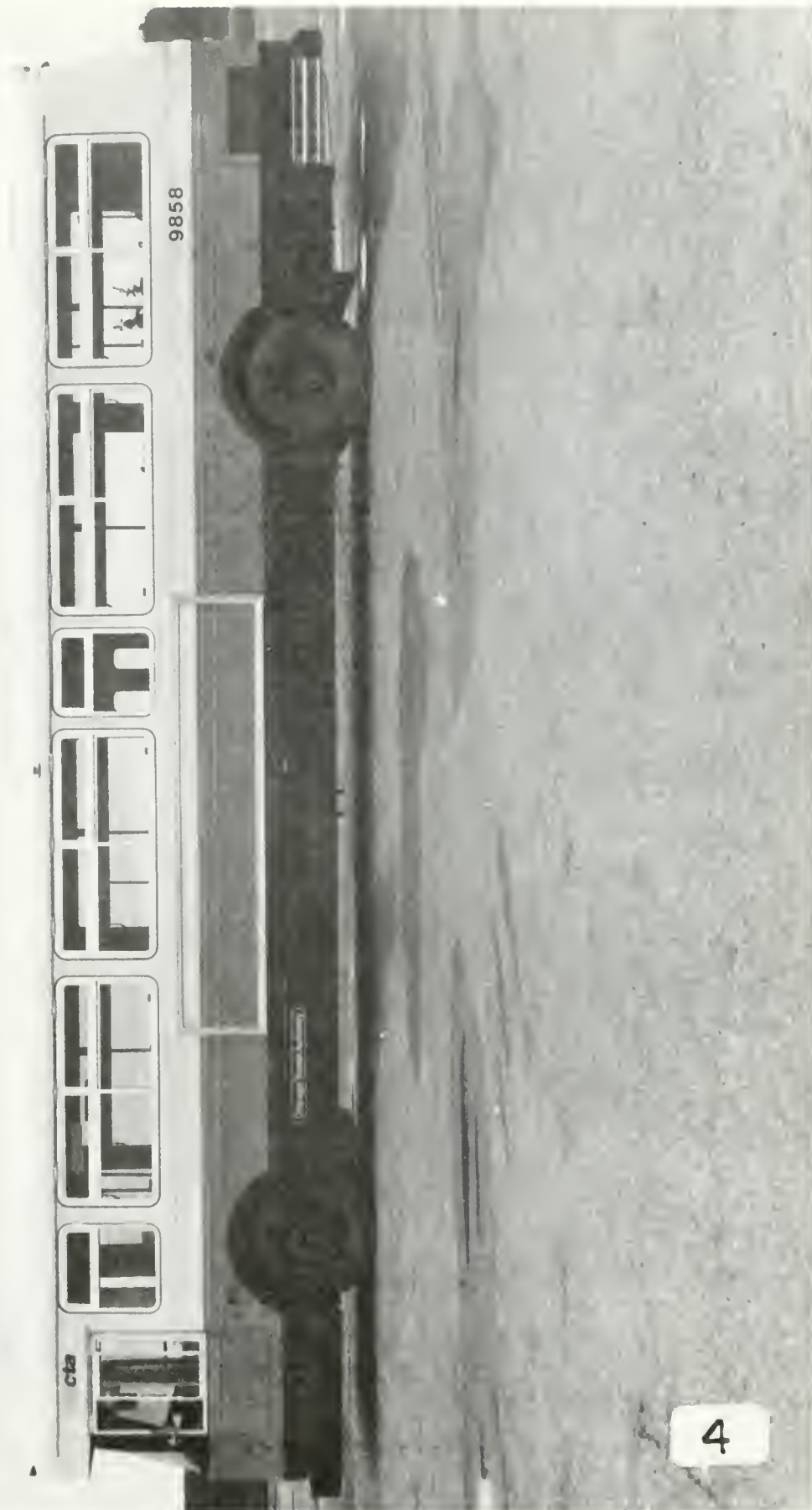
Bus Photos continued

- K. Photos 272 thru 284-Miscellaneous; Instrument panel front and rear before installation; stepwells before step tread; removal of fiber glass front end from completed bus
- 272. Instrument panel before installation
 - 273. Back side of instrument panel
 - 274. Front step well installed underside
 - 275. Rear step well installed underside
 - 276. Outside view step well entrance door installed
 - 277. Outside view entrance door stepwell
 - 278. Stepwell welding
Various photos front fiber glass removal from completed bus
 - 279. Right front view
 - 280. Front view lower
 - 281. Front view upper
 - 282. Complete front view
 - 283. Complete front view
 - 284. Drivers area













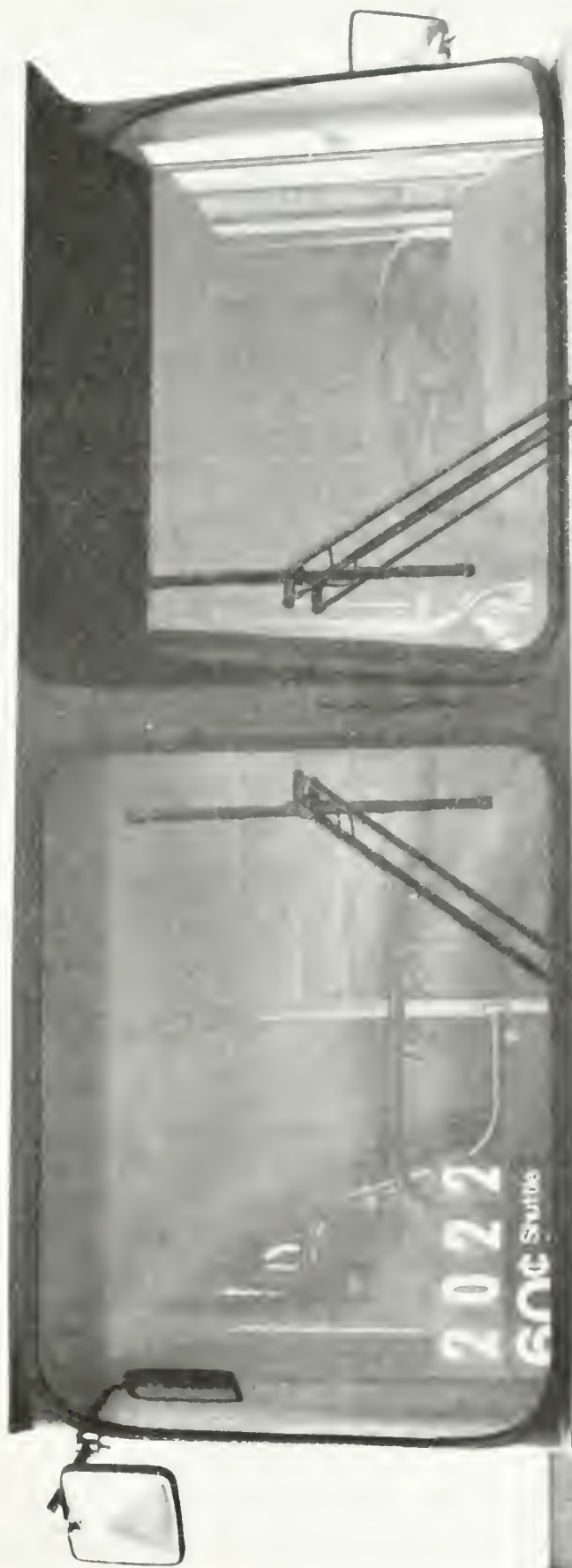
cta The Spirit of Chicago

2022
600 Series



9858

cta



Freightliner

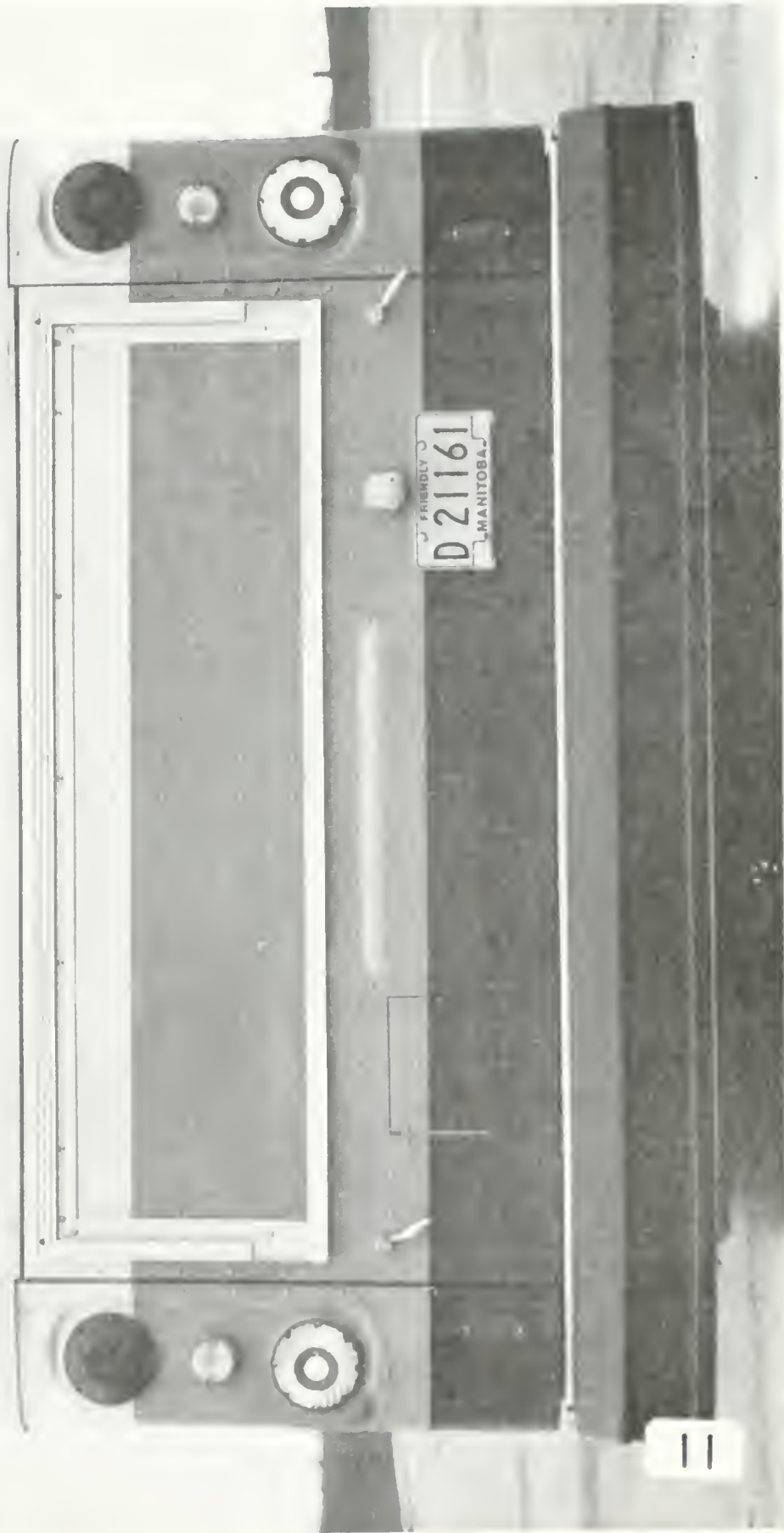
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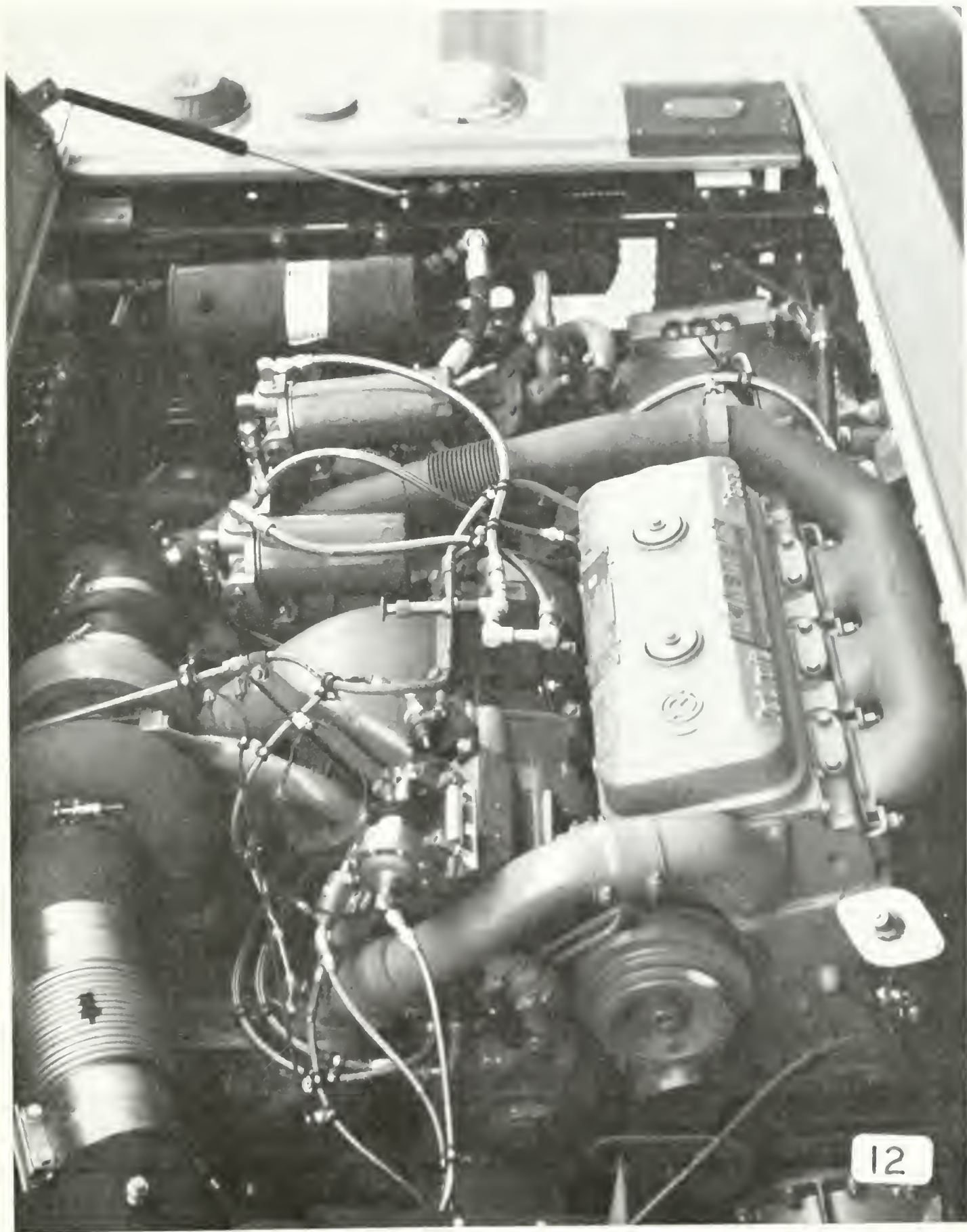




cta *The Spirit of Chicago*









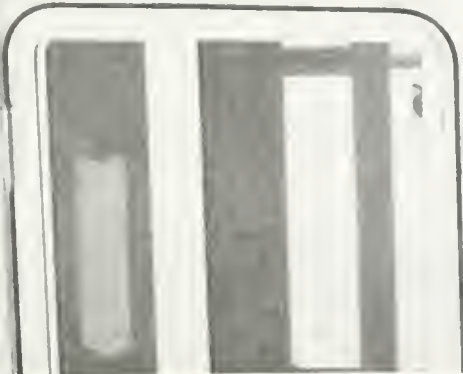
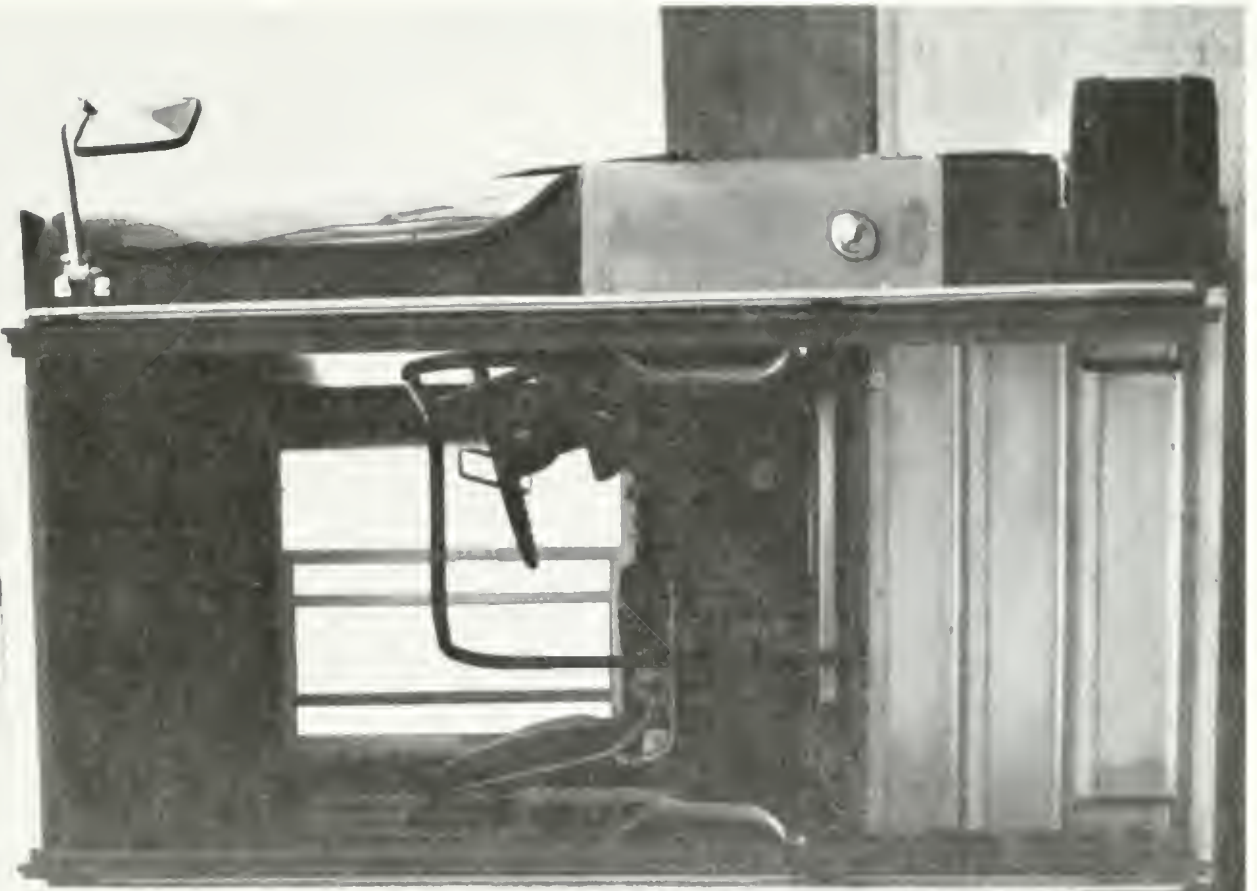
CIA



Exact fare
required
Driver has
NO change

NO dollar bills

cia

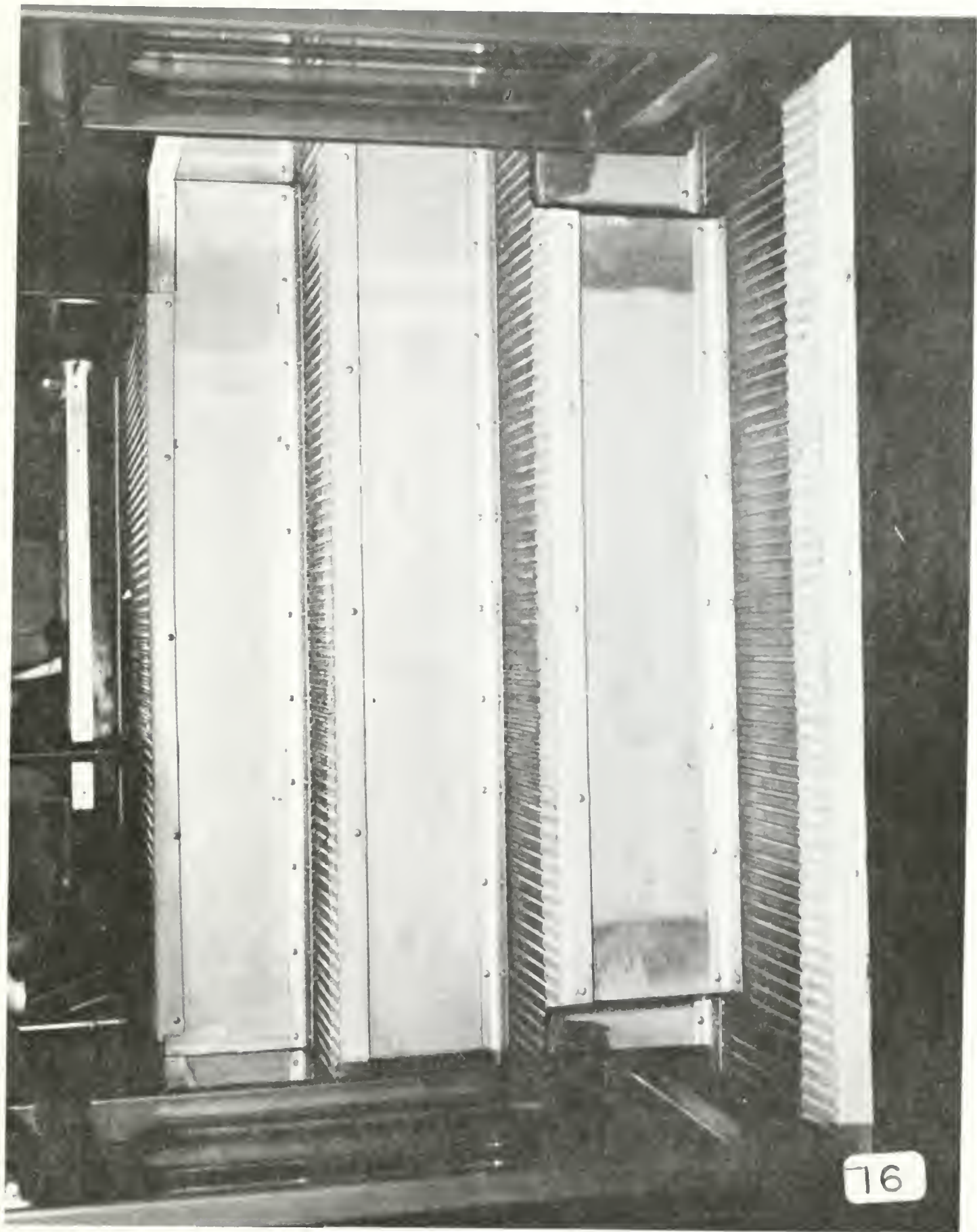


**Exact fare
required**
Driver has
NO change

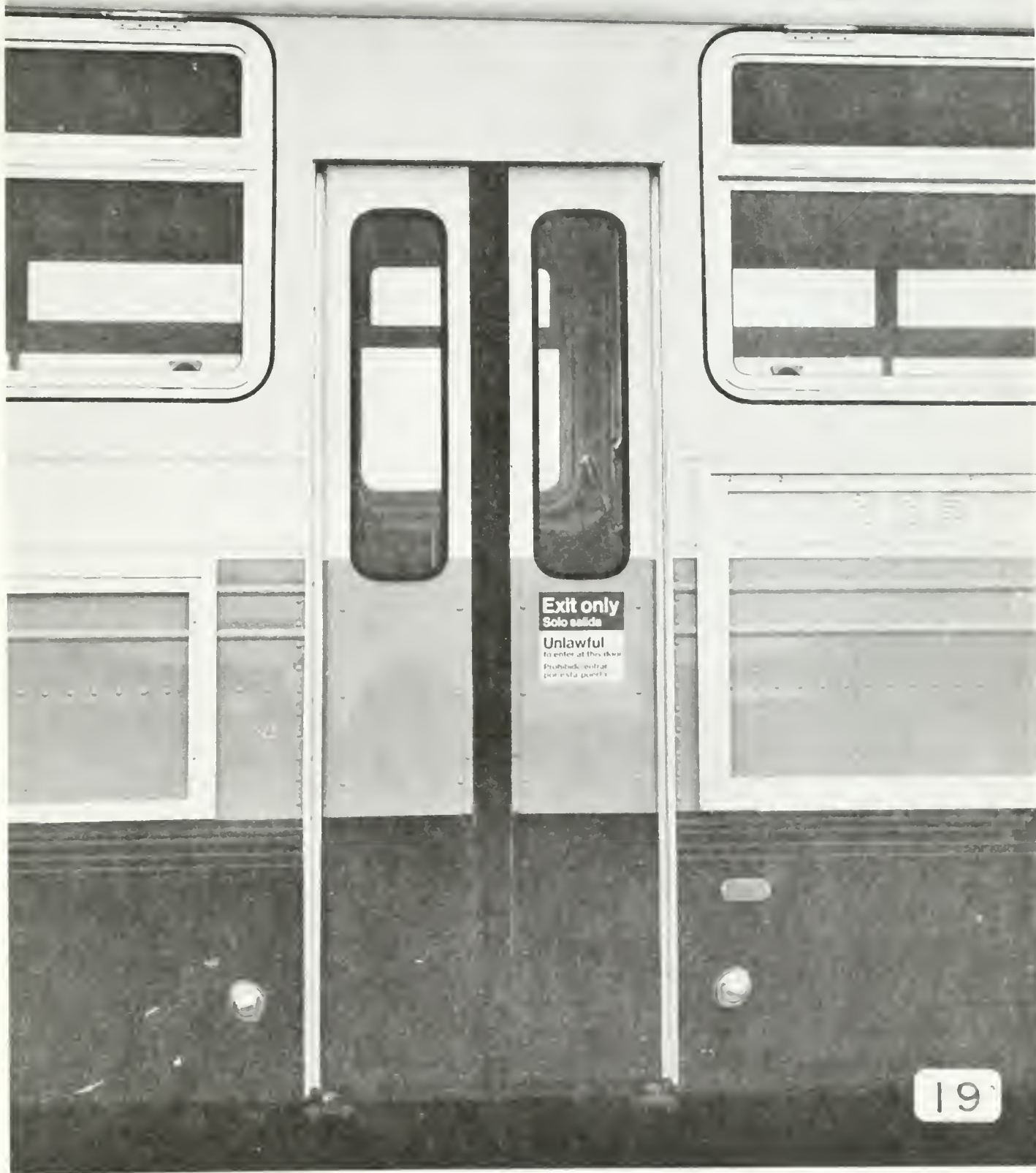
NO dollar bills



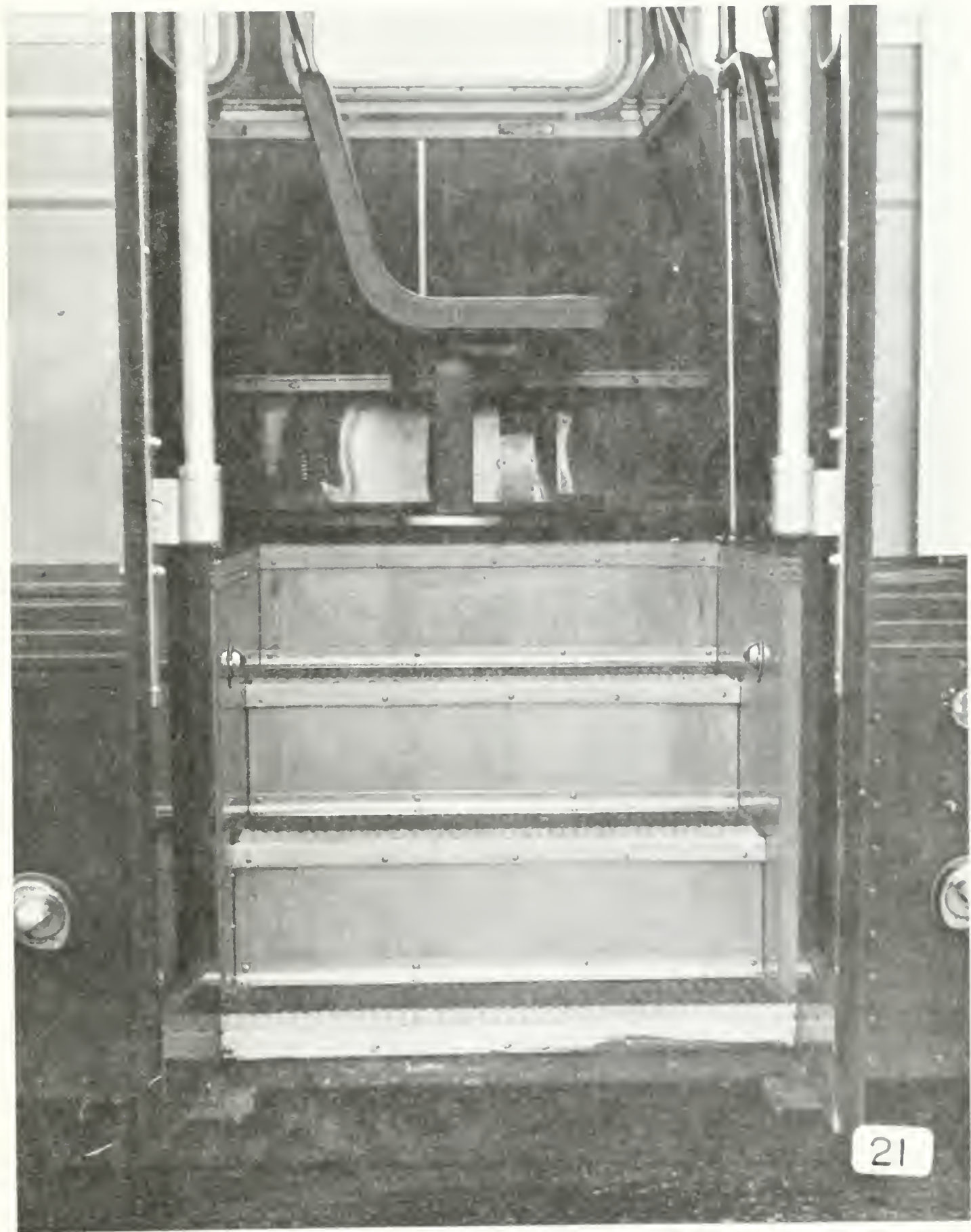


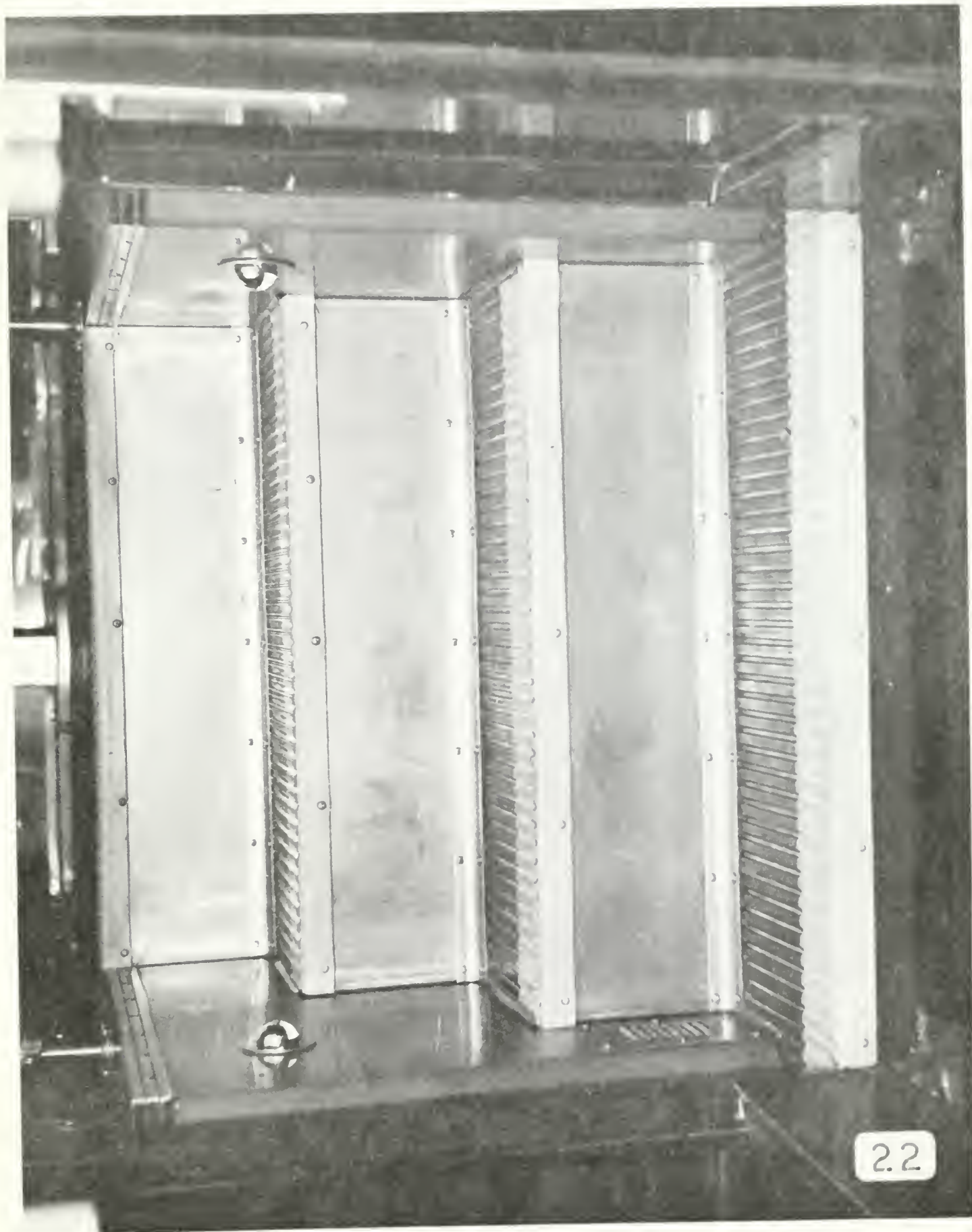




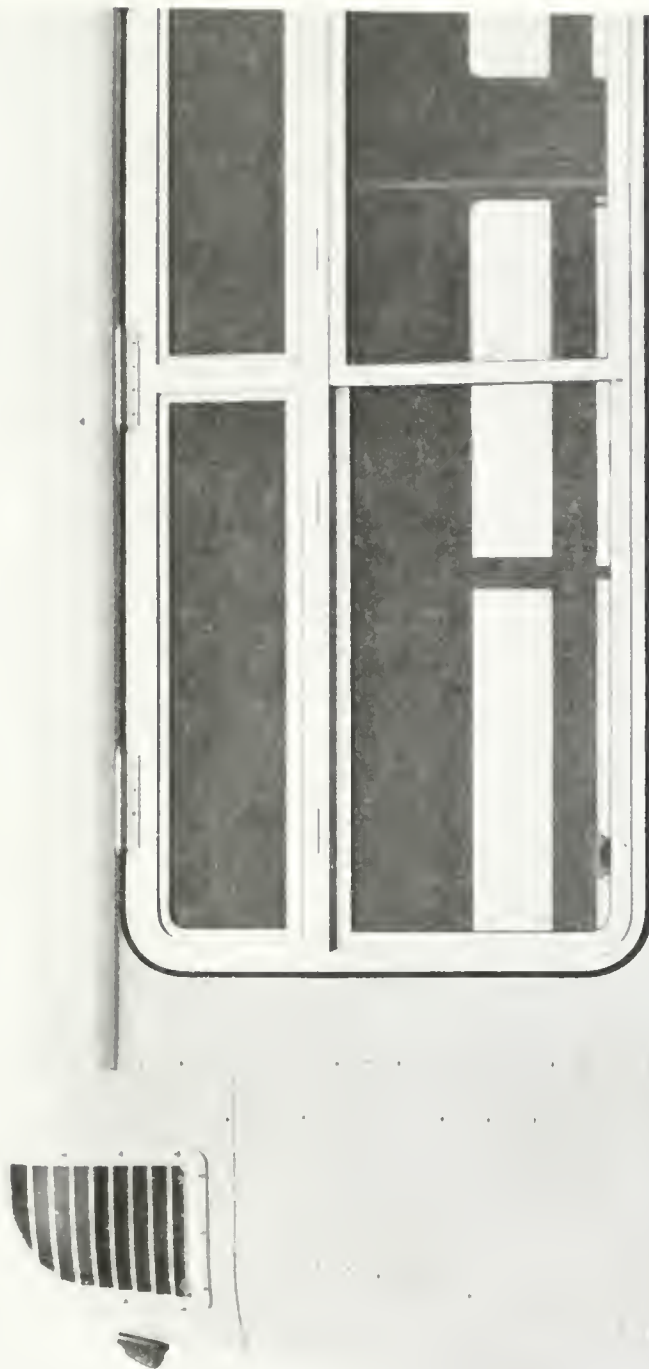




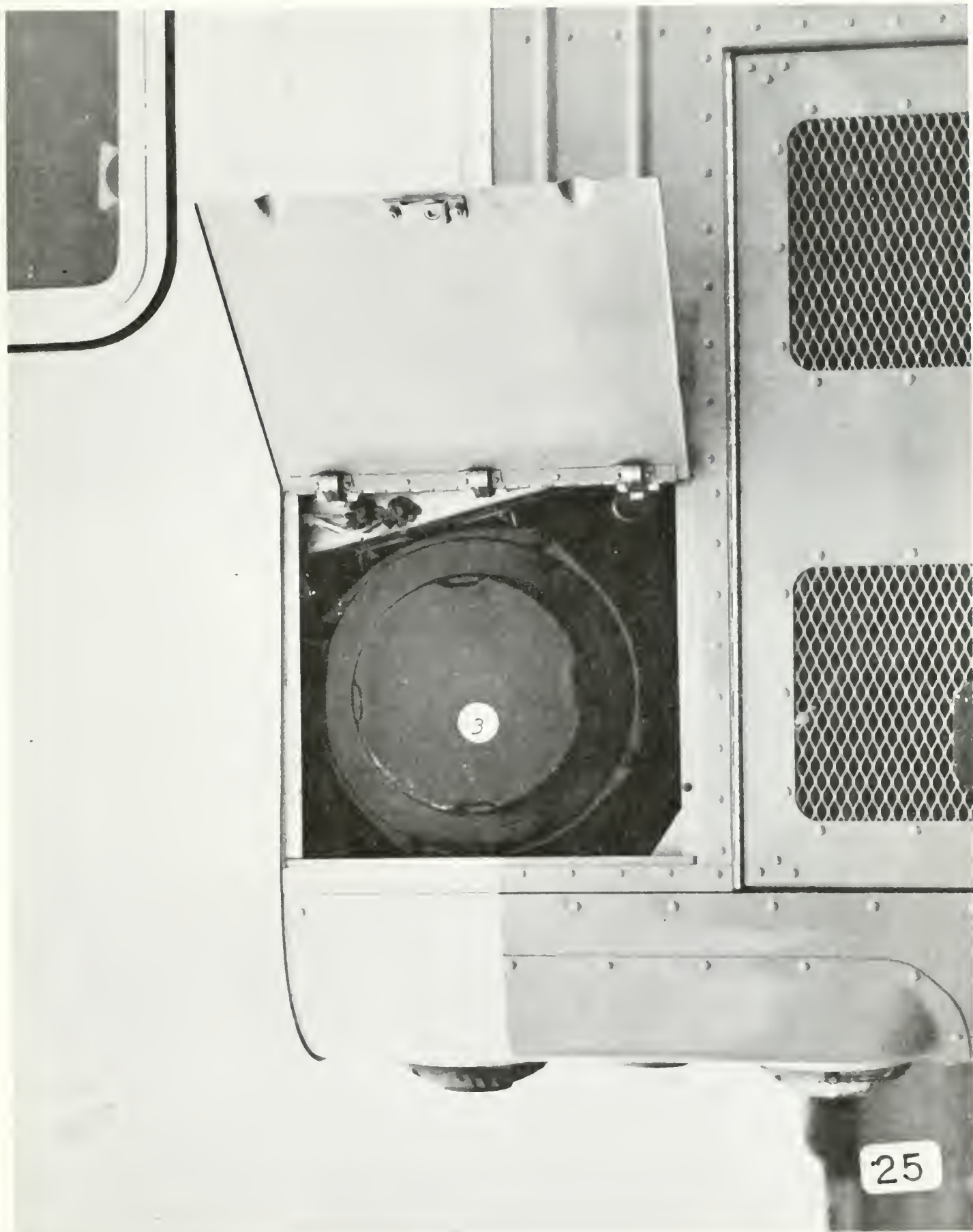






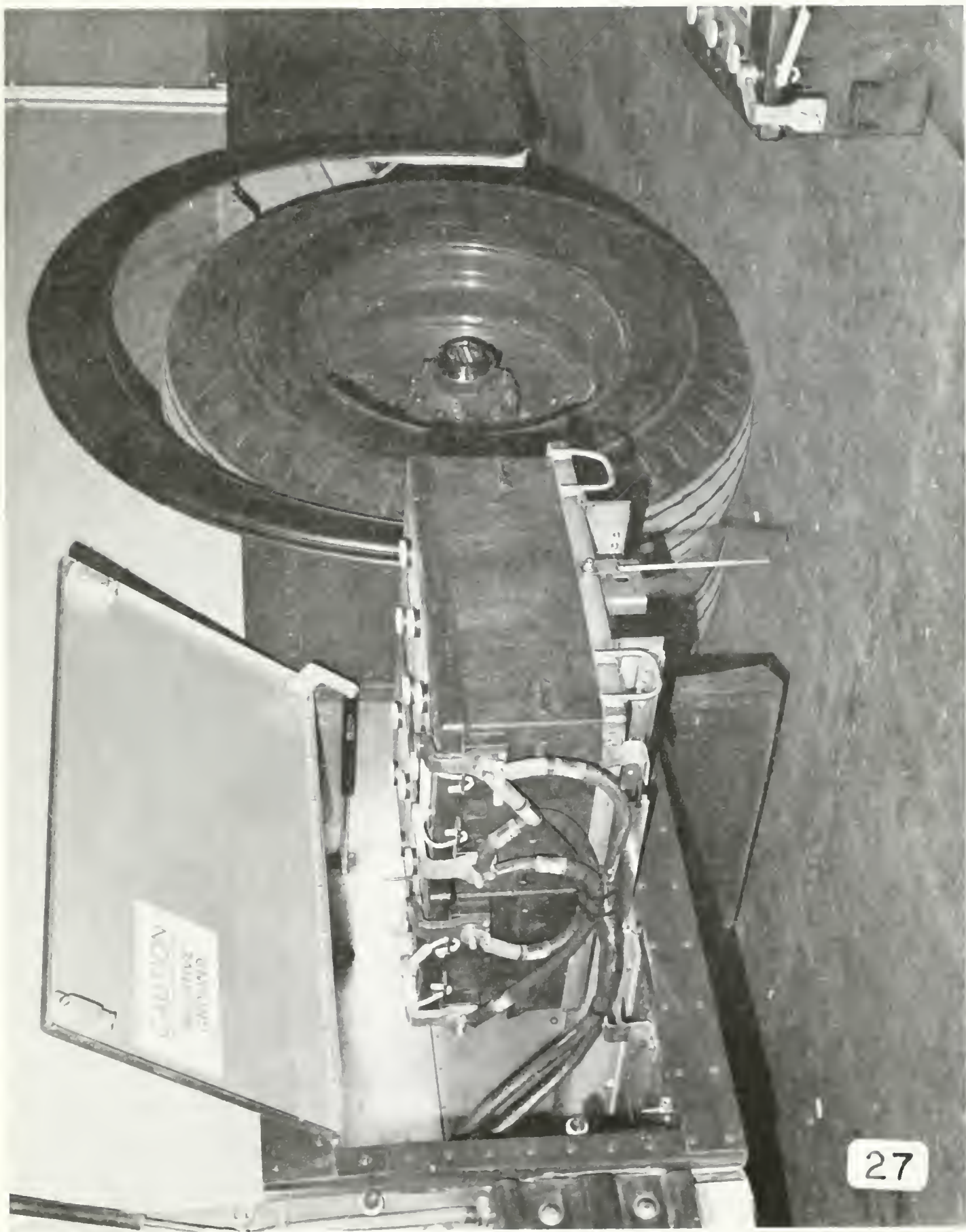


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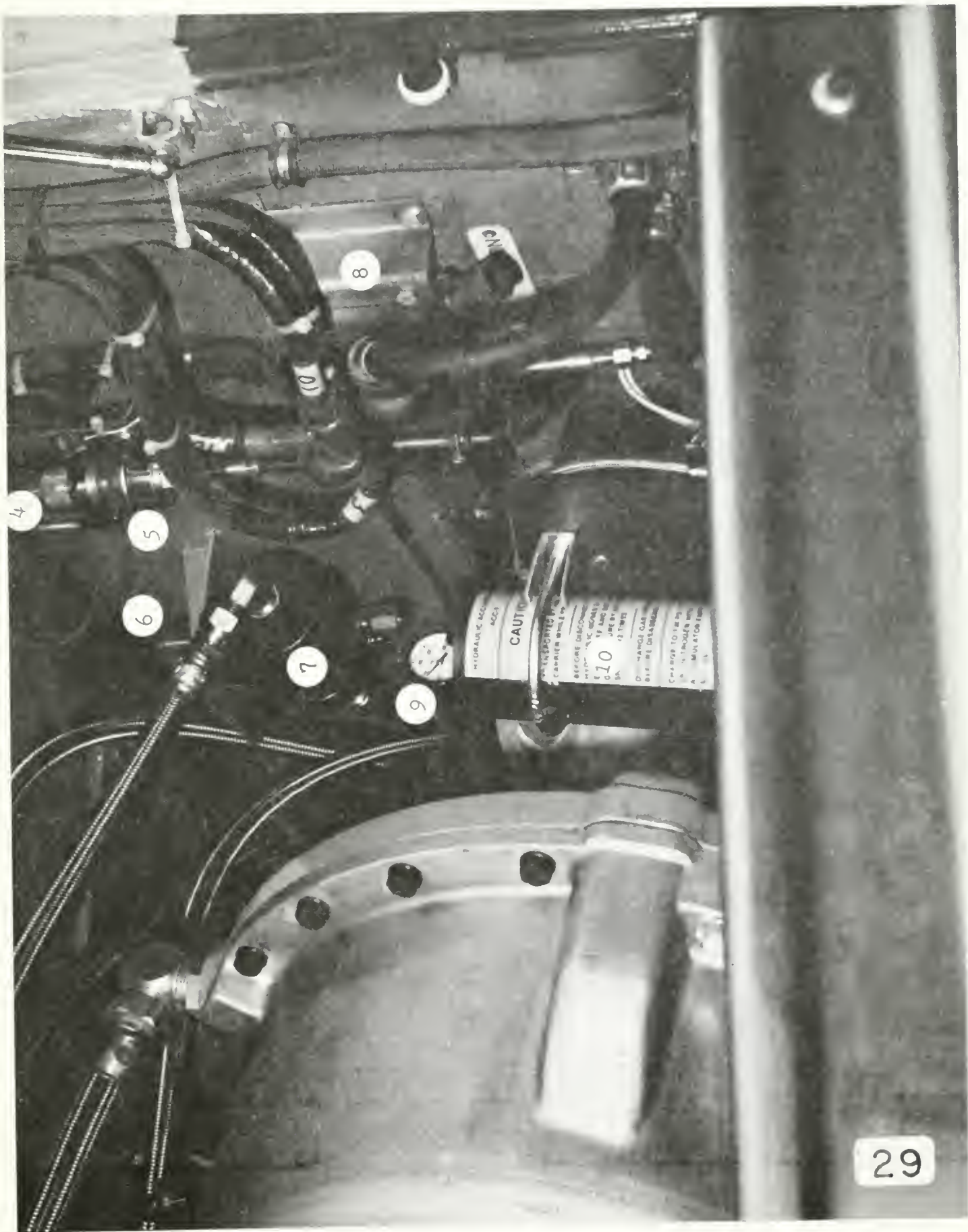
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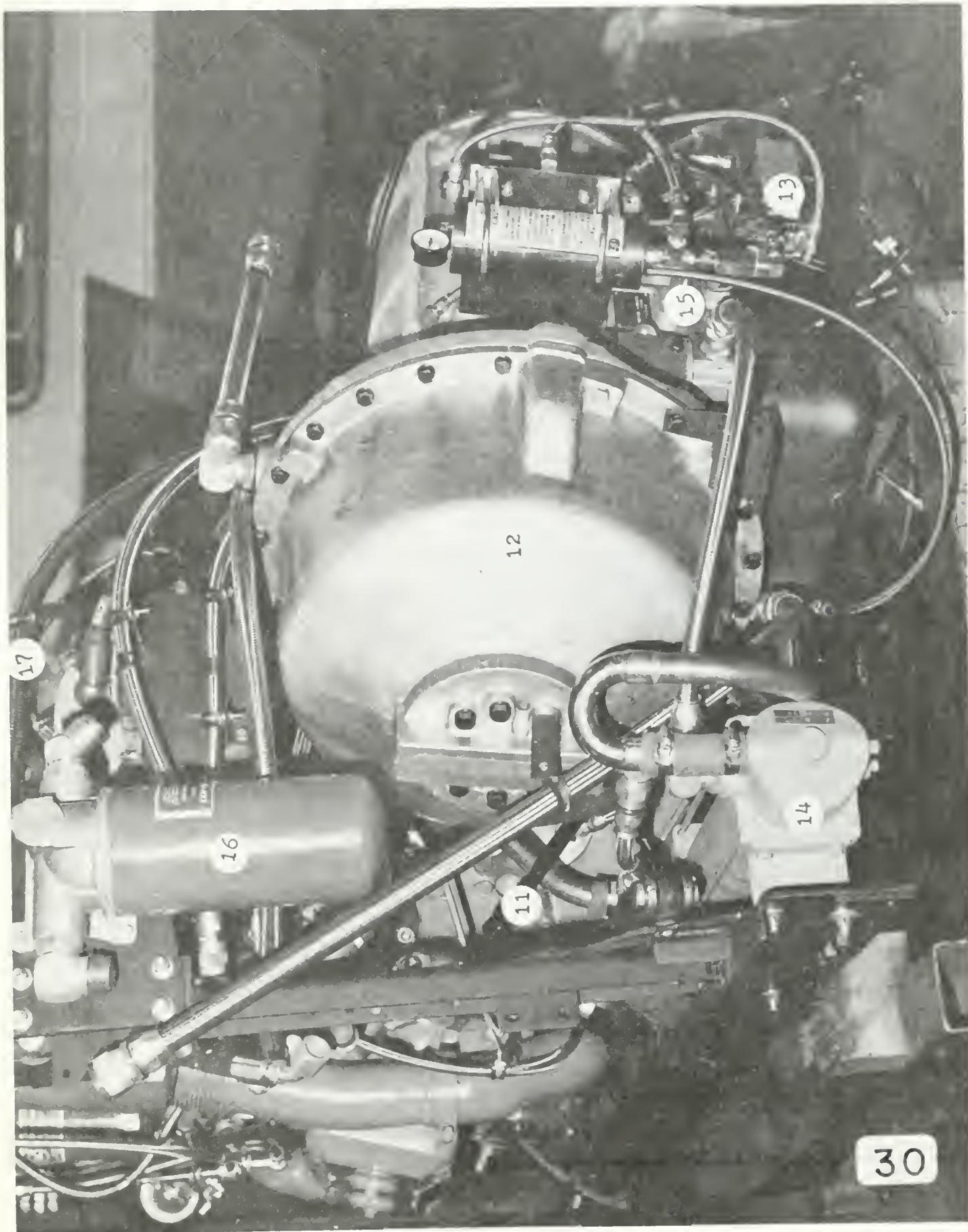


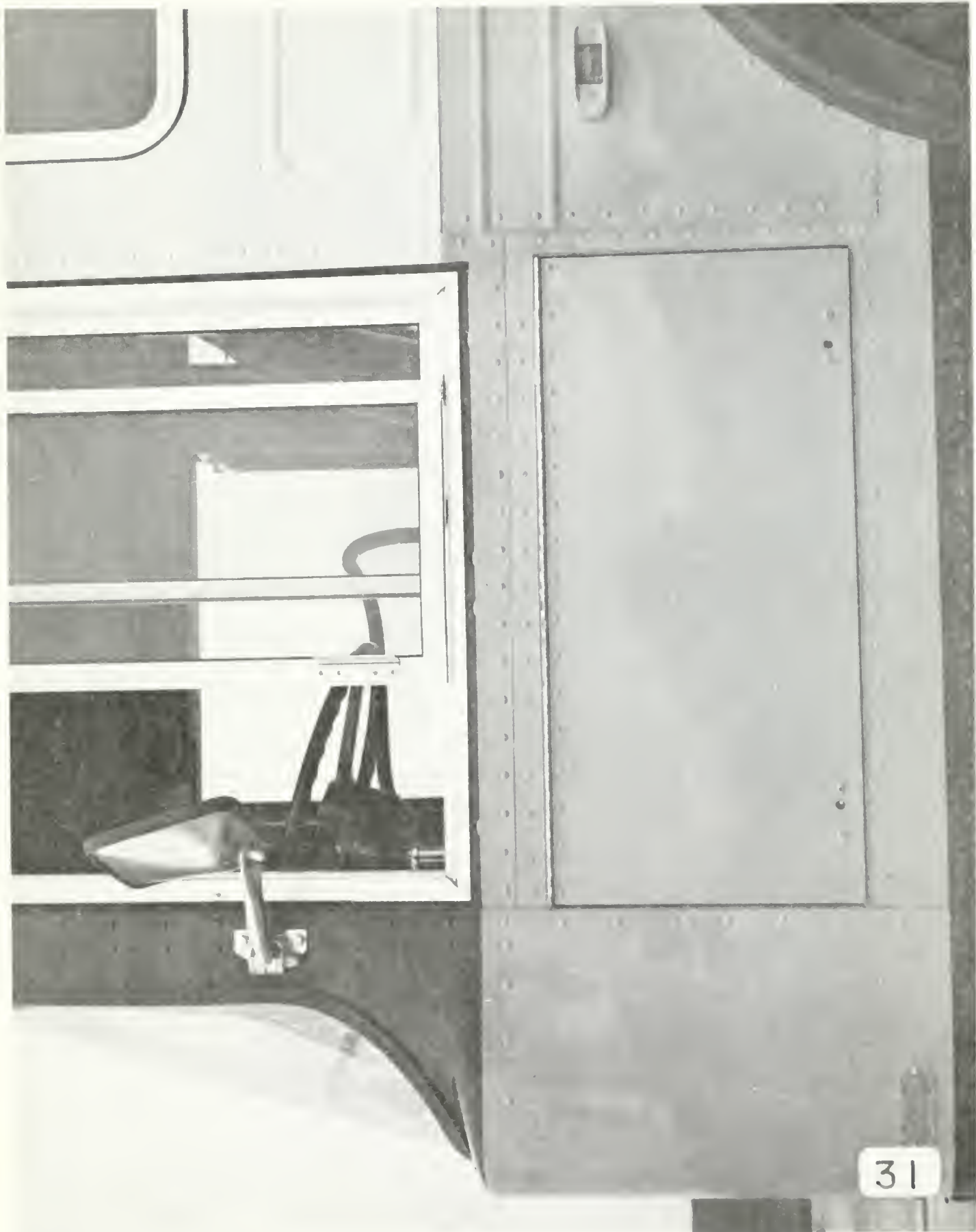


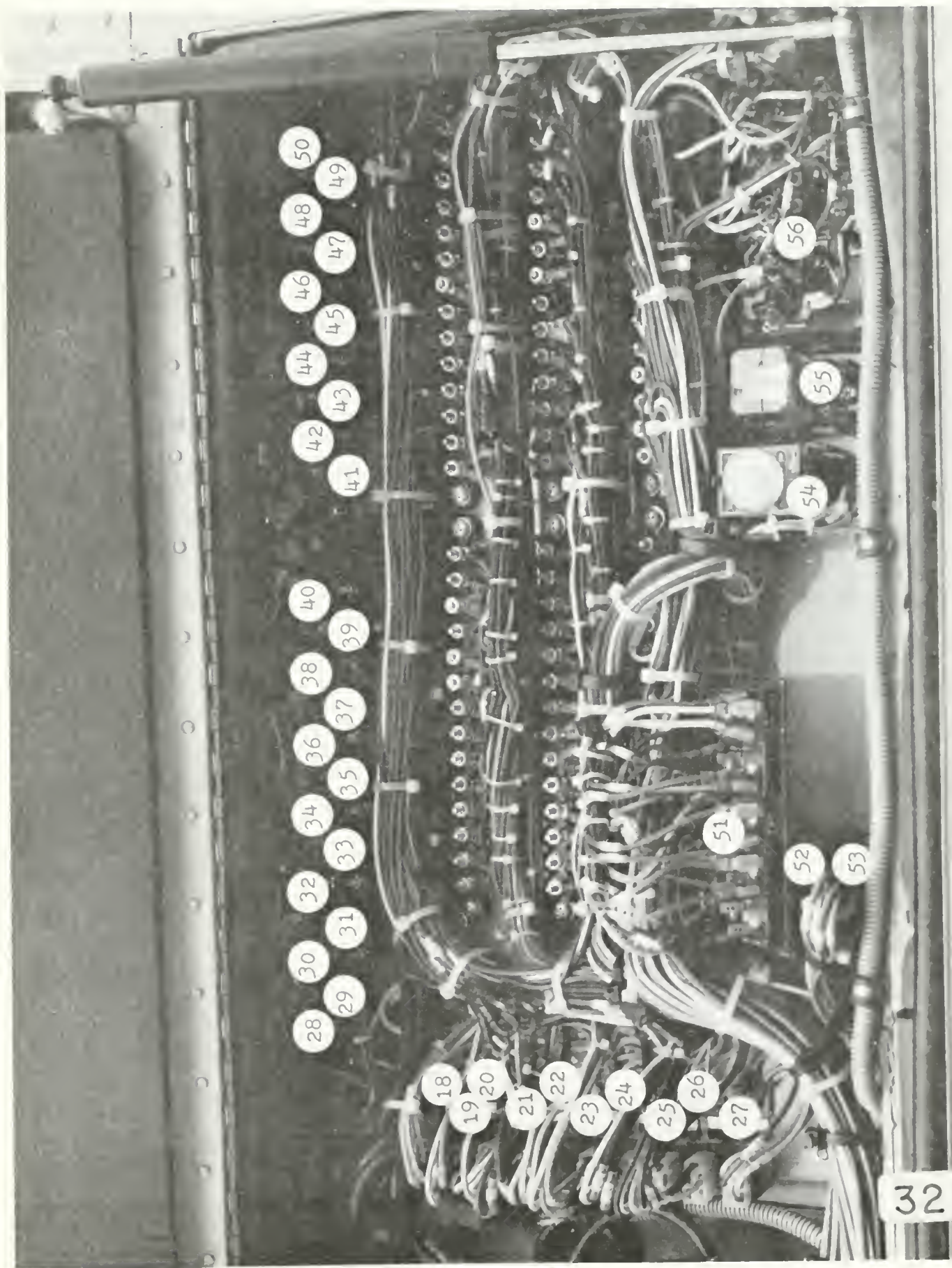
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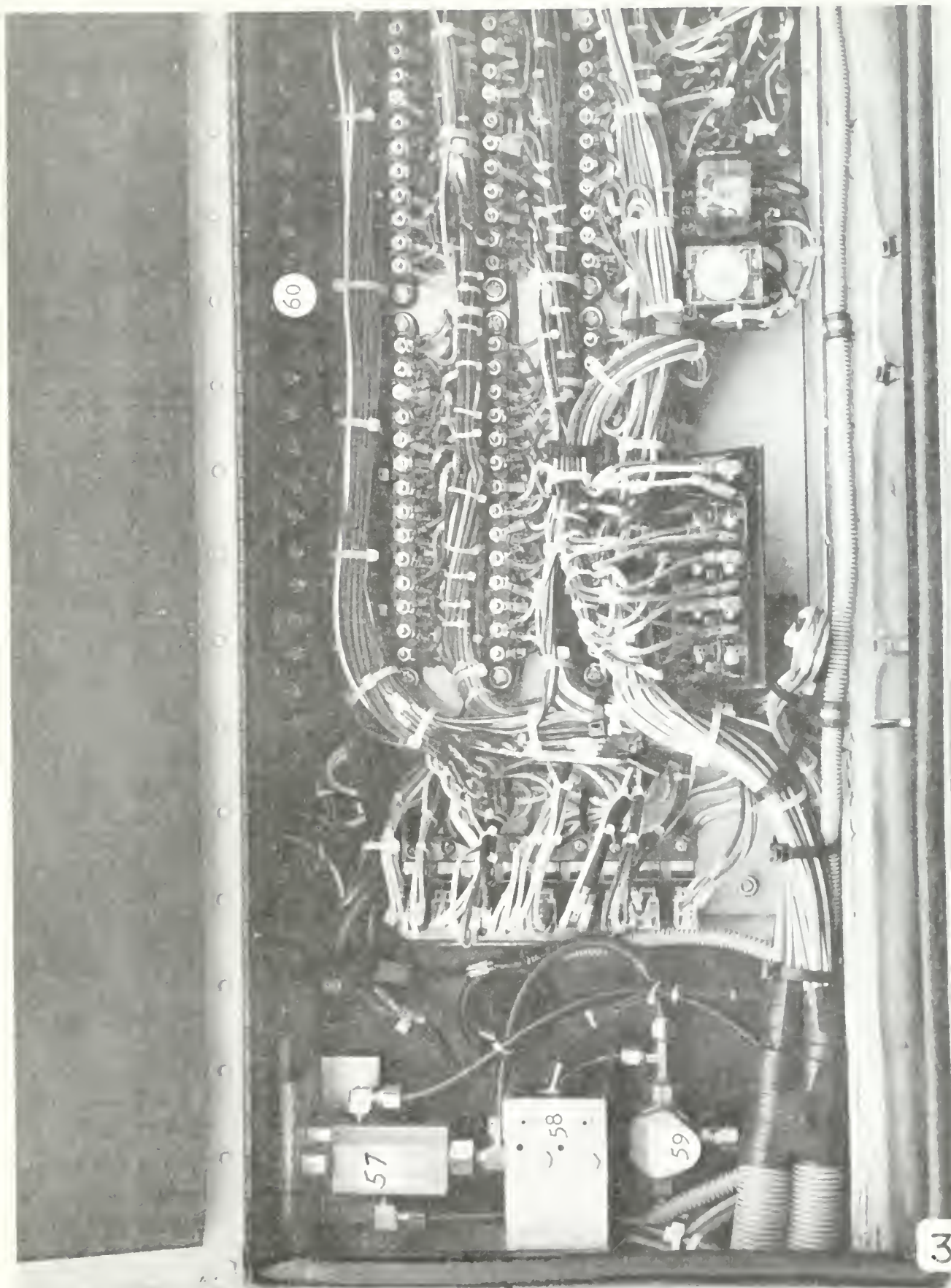
CAUTION
NEGATIVE
GROUND





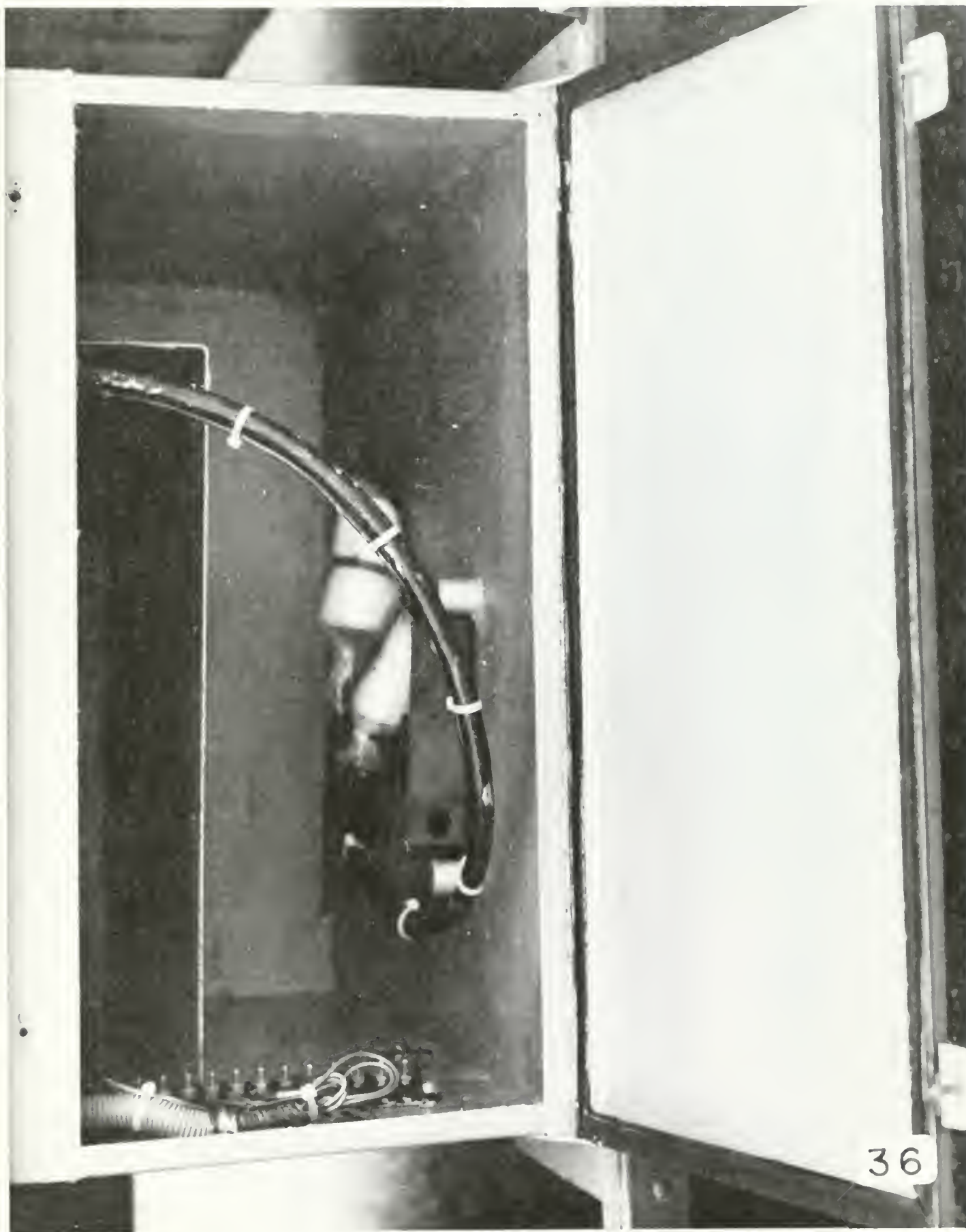






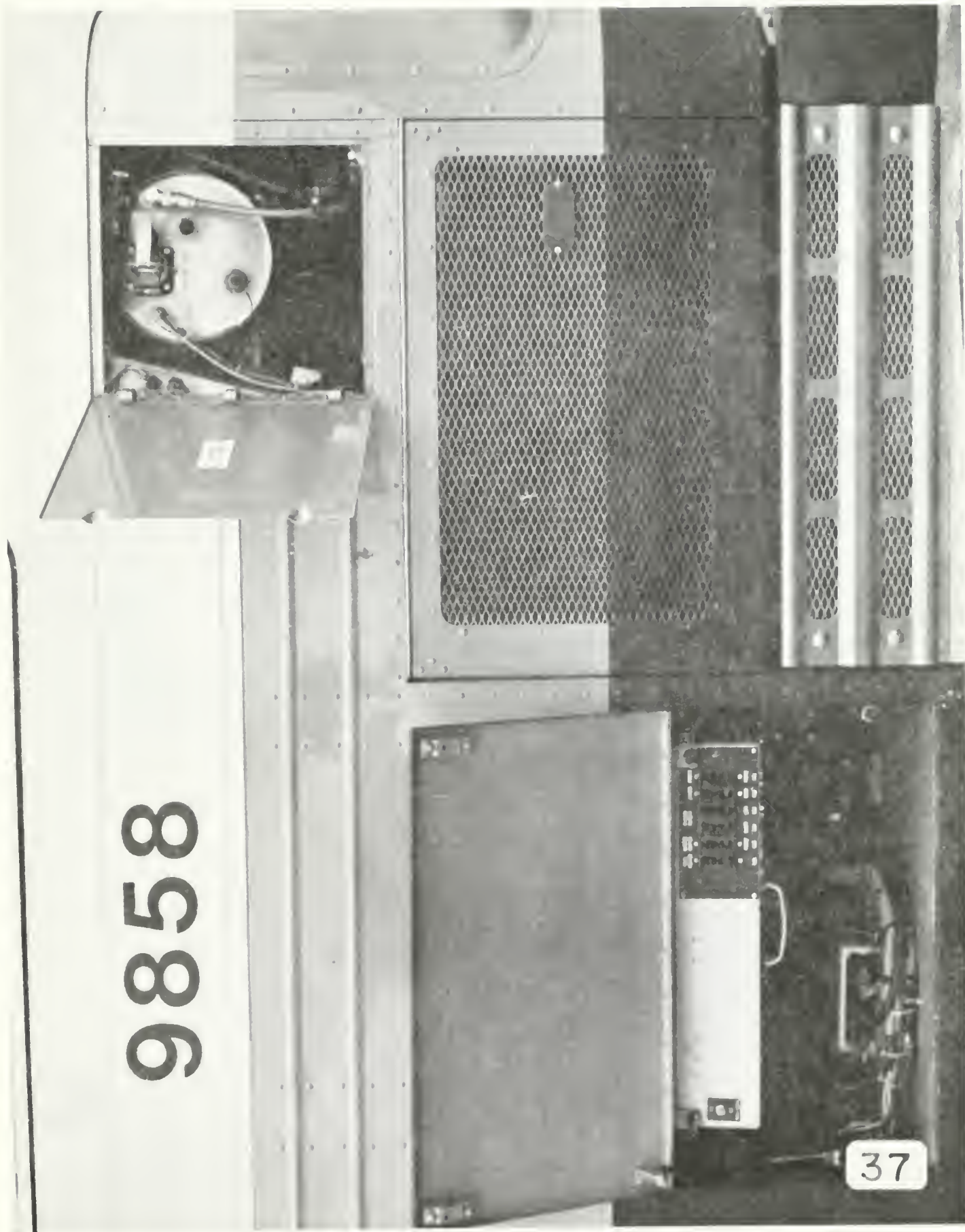
Chicago Transit Authority



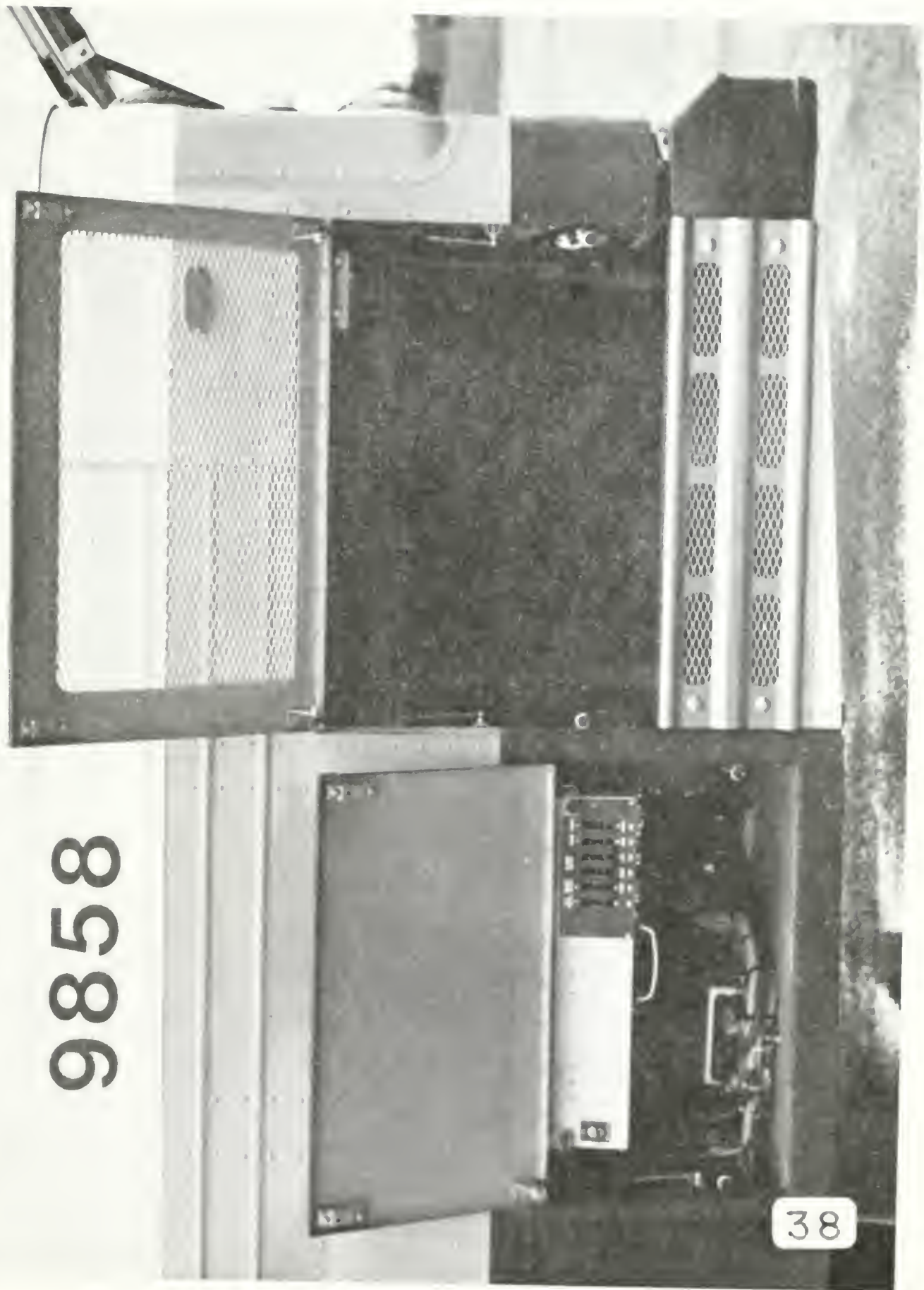


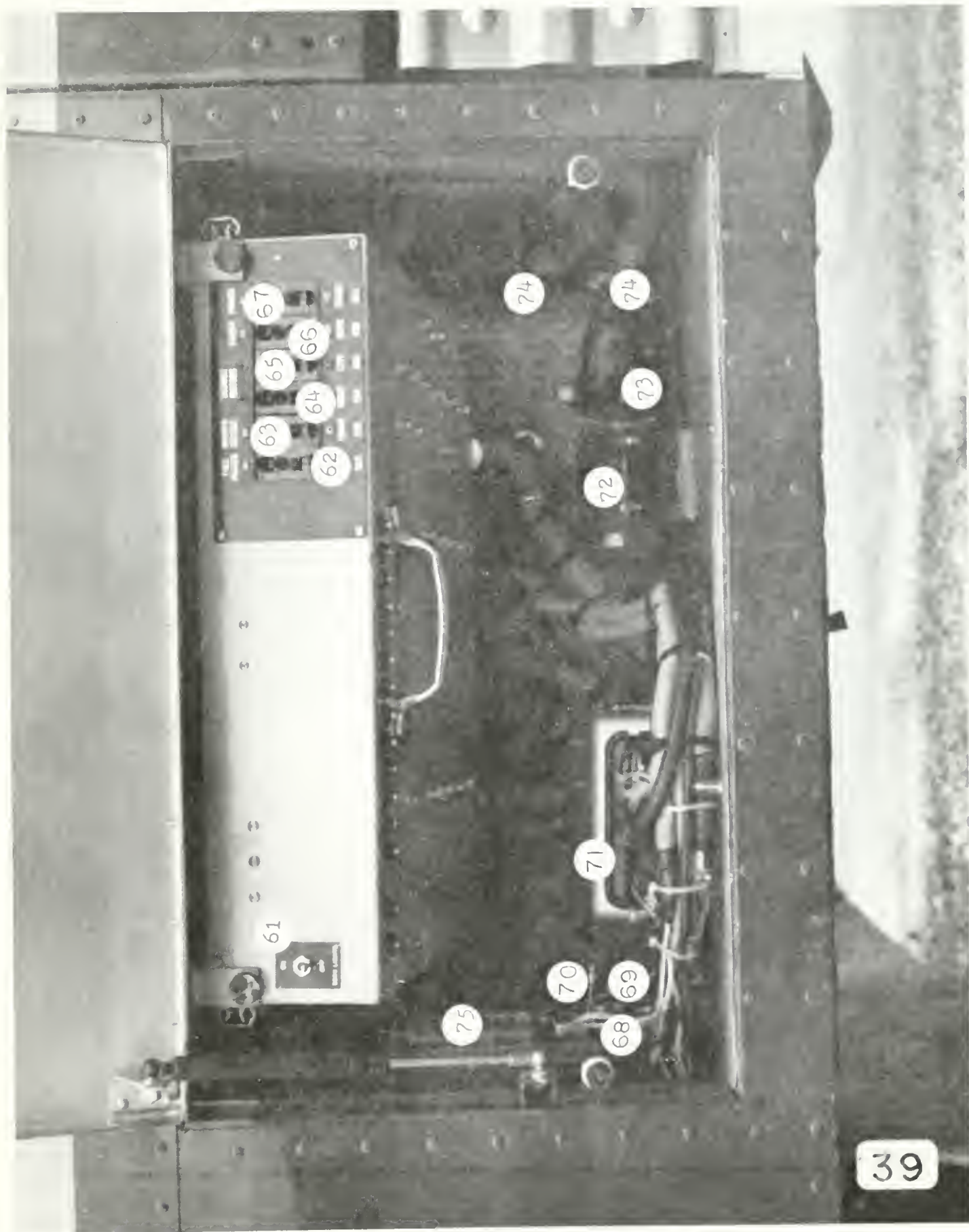
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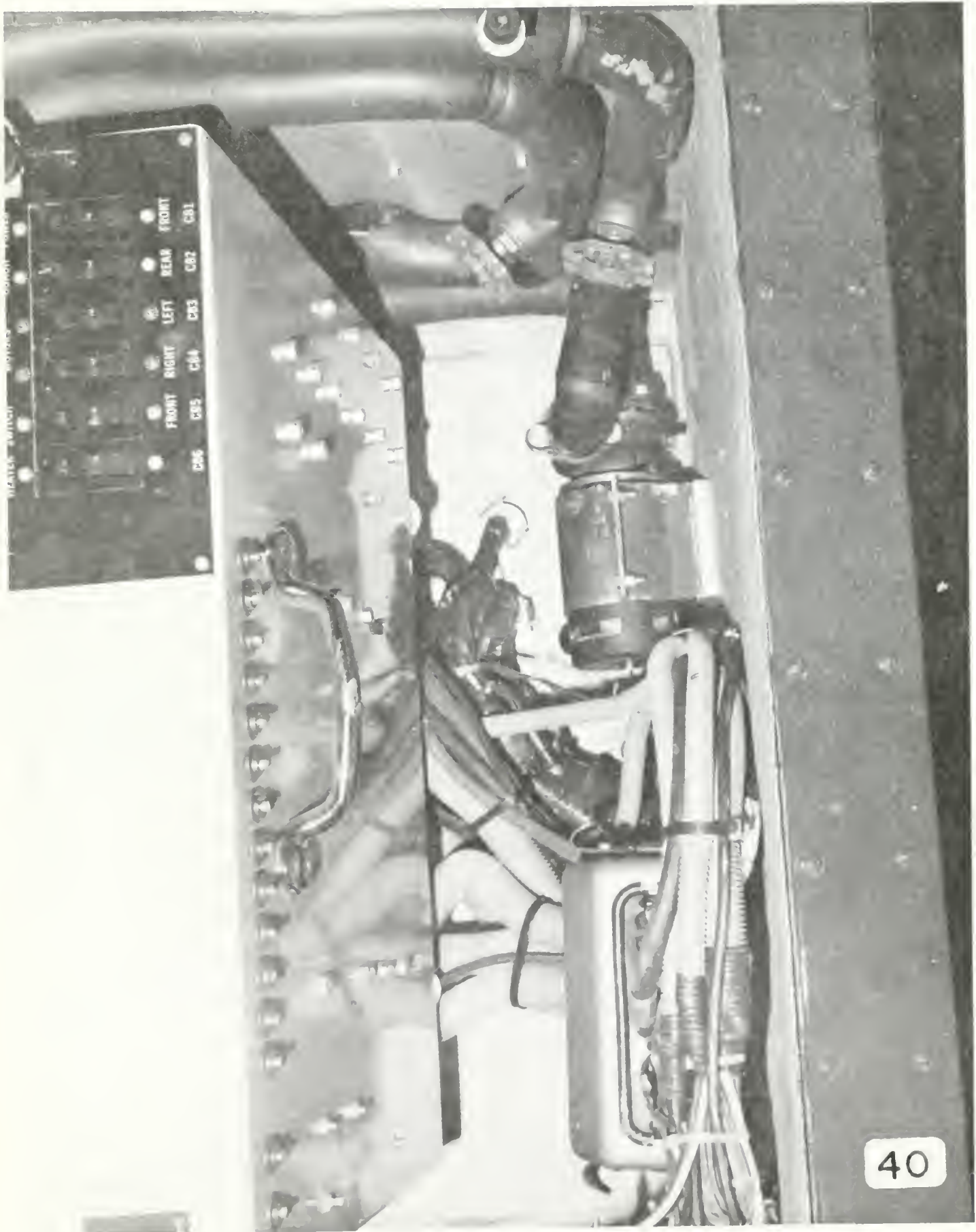
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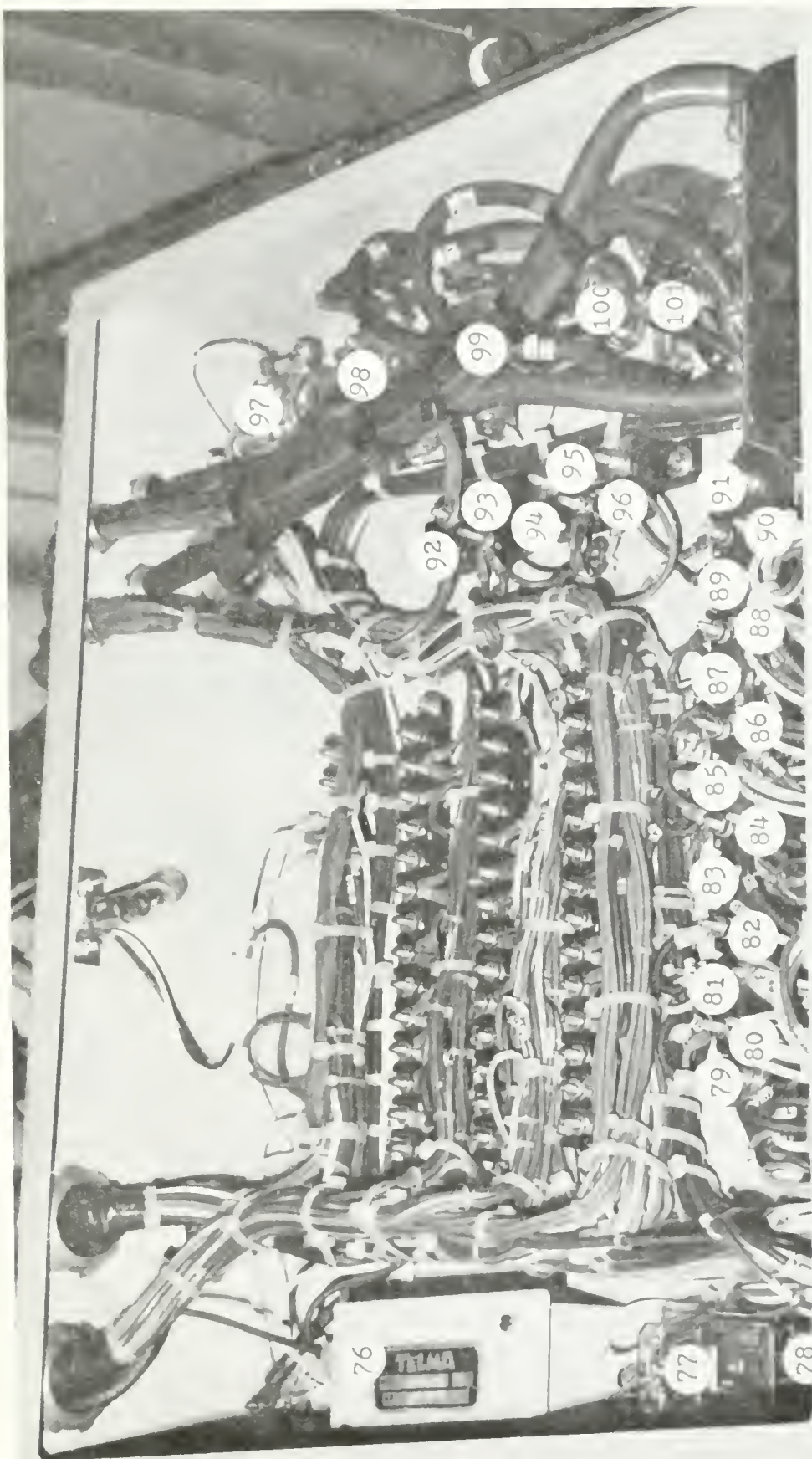


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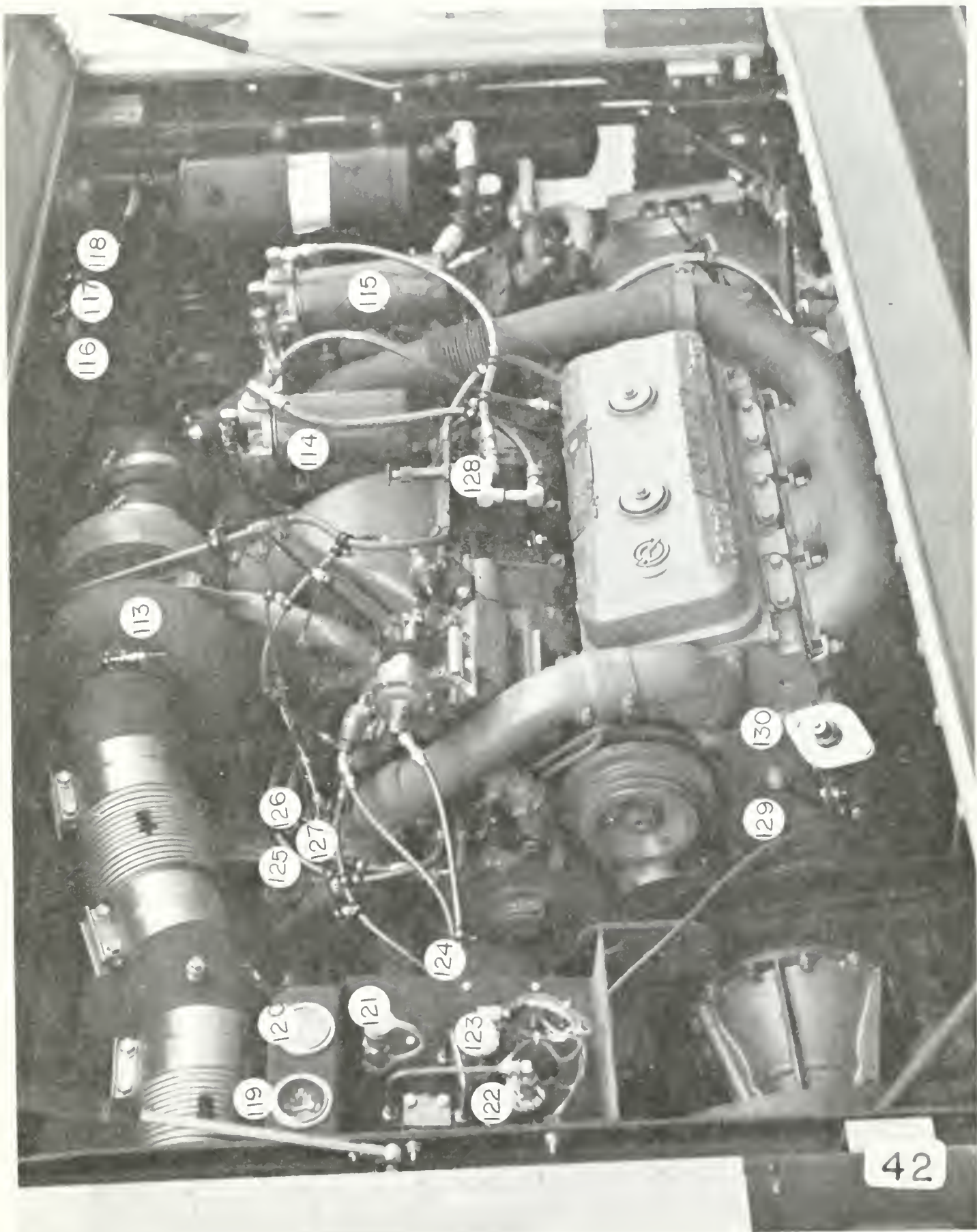


108, 109, 110, 111

102, 103, 104, 105, 106, 107

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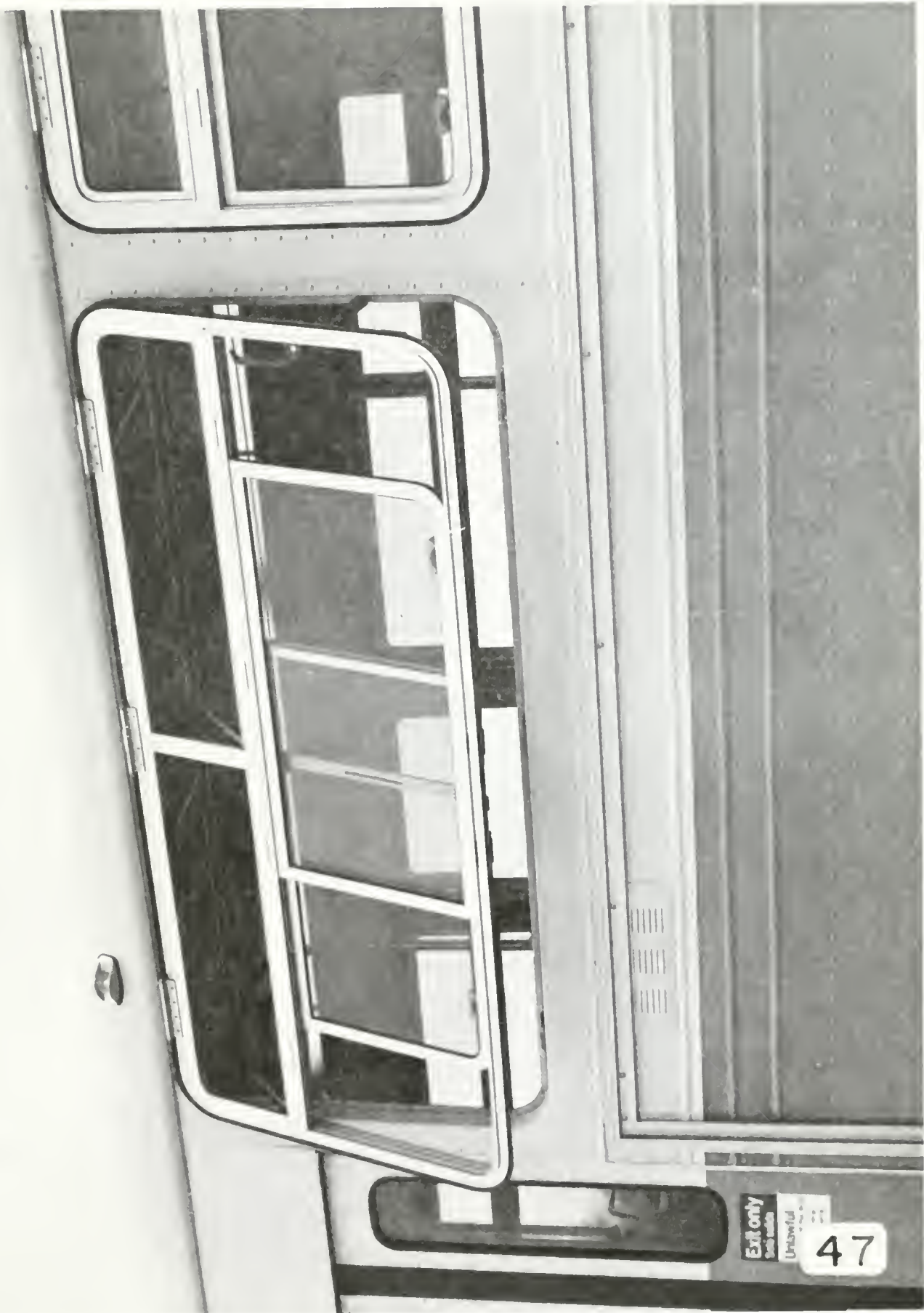










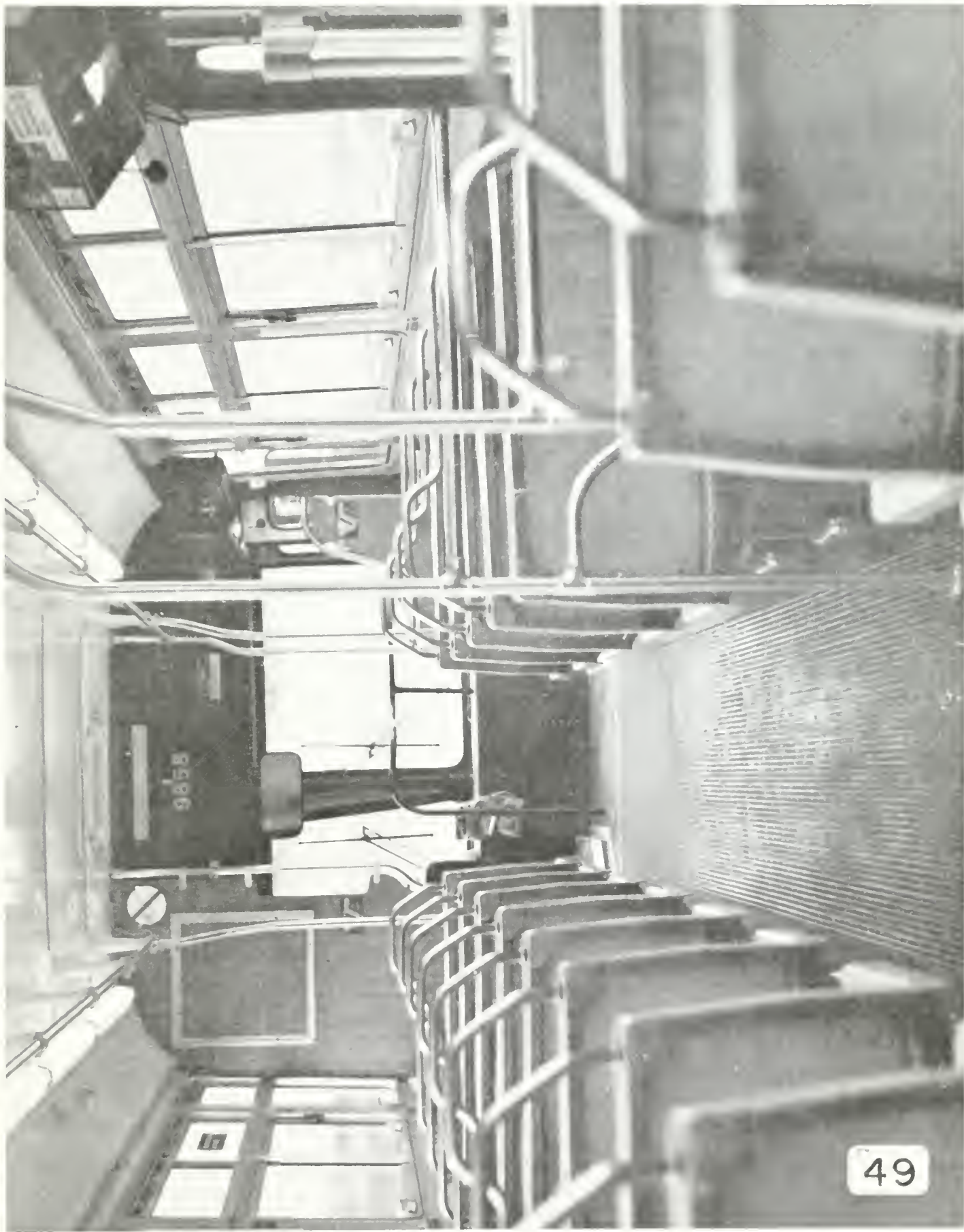


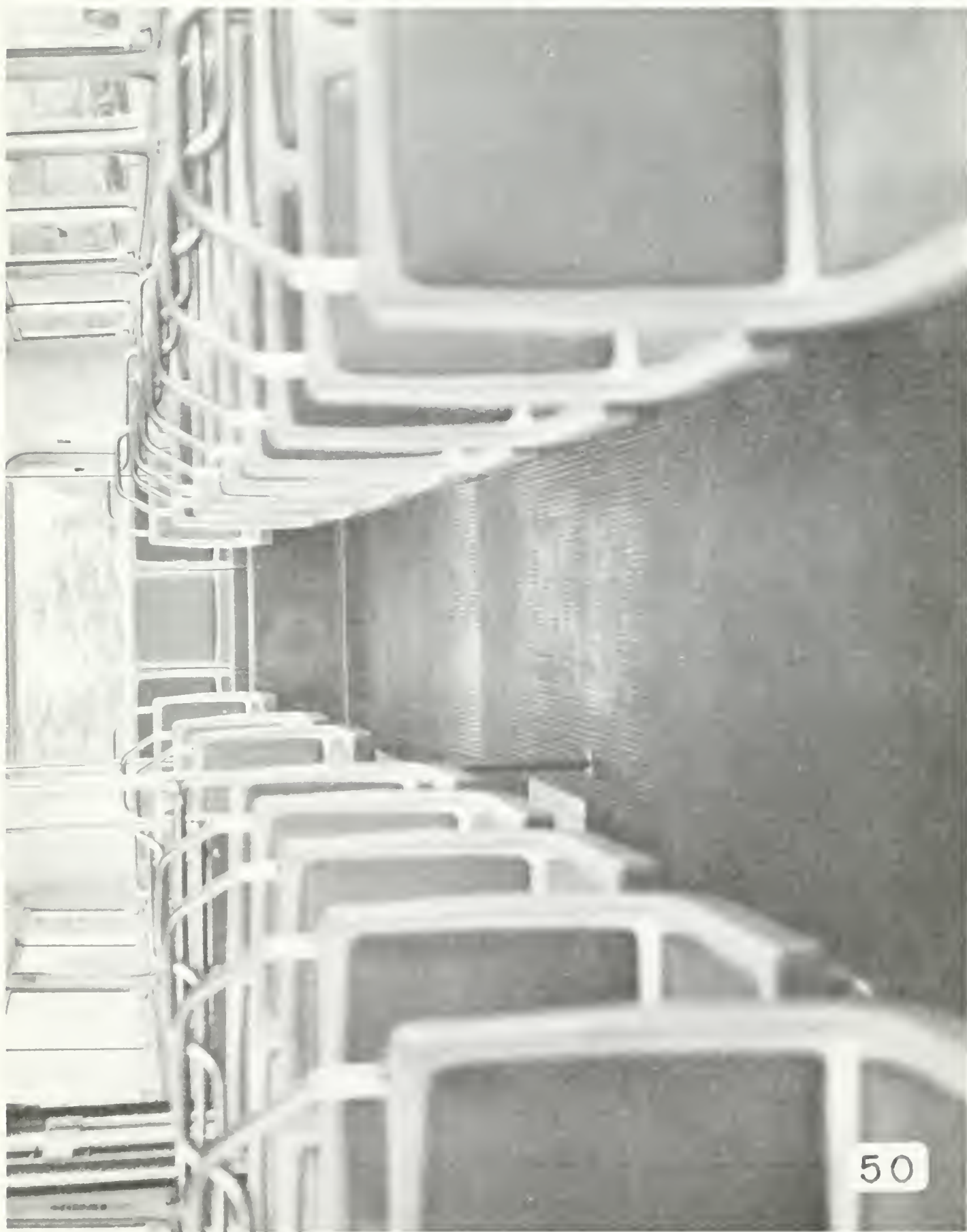
Exit only
Not to be used

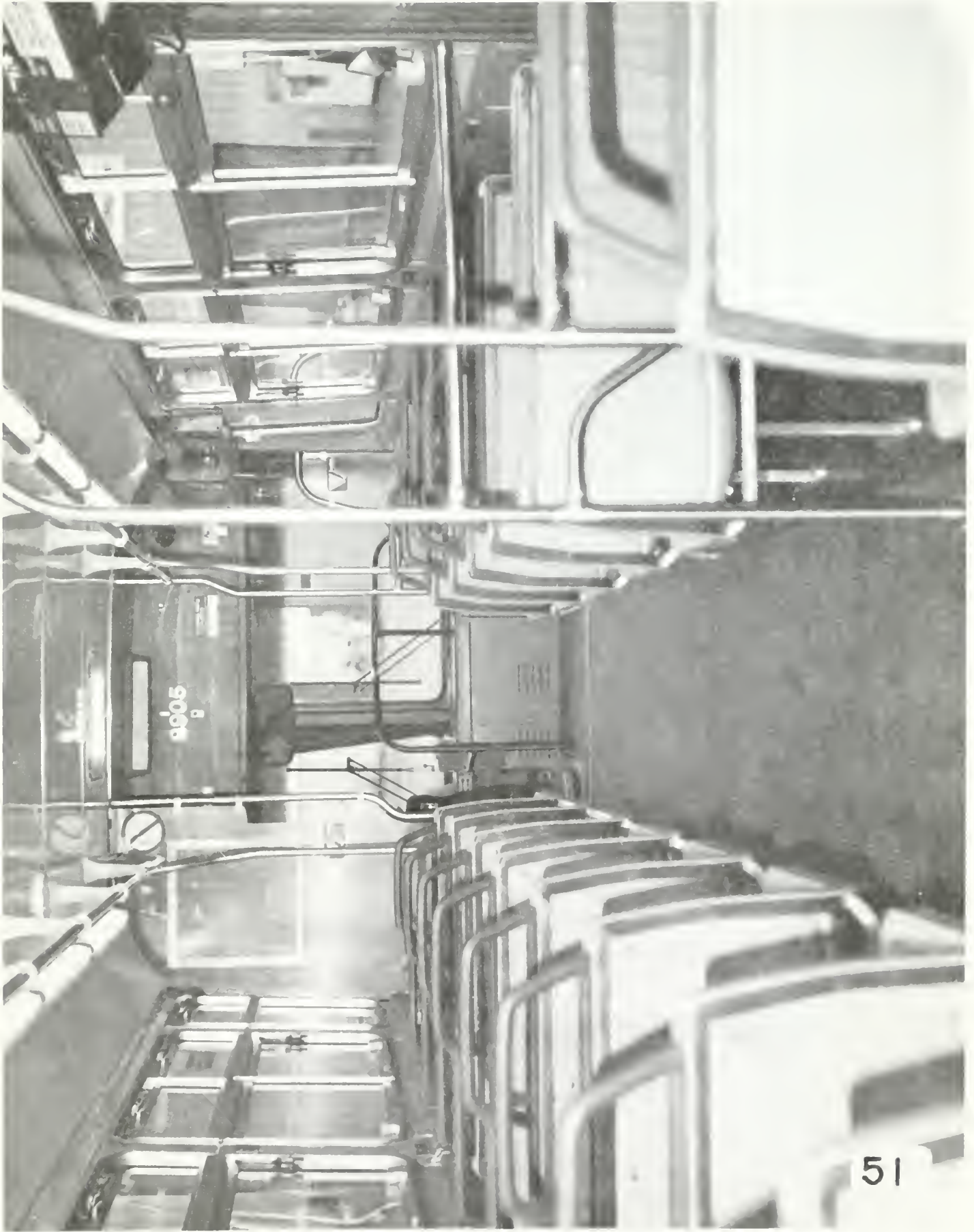
Unauthorized
Use is prohibited

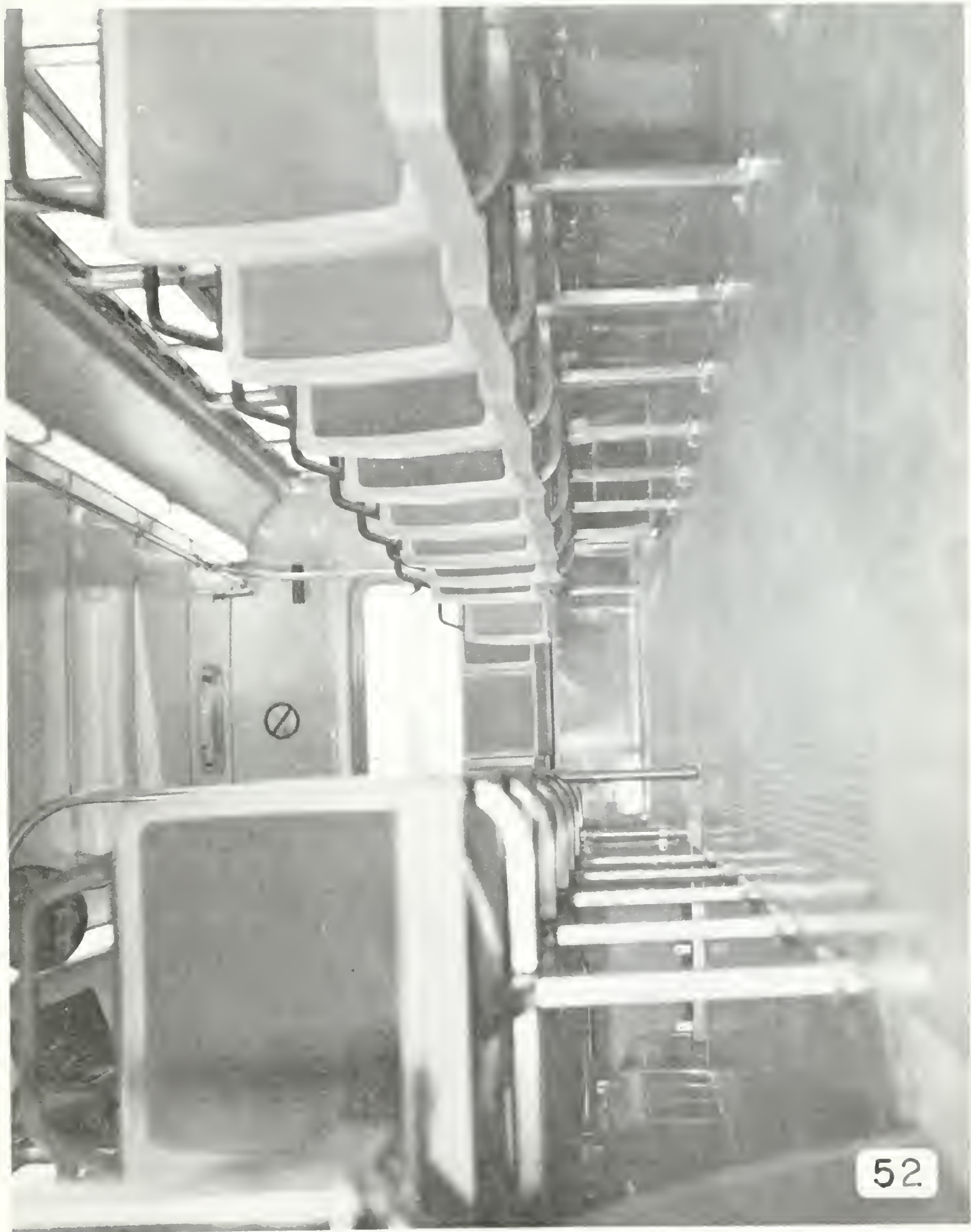
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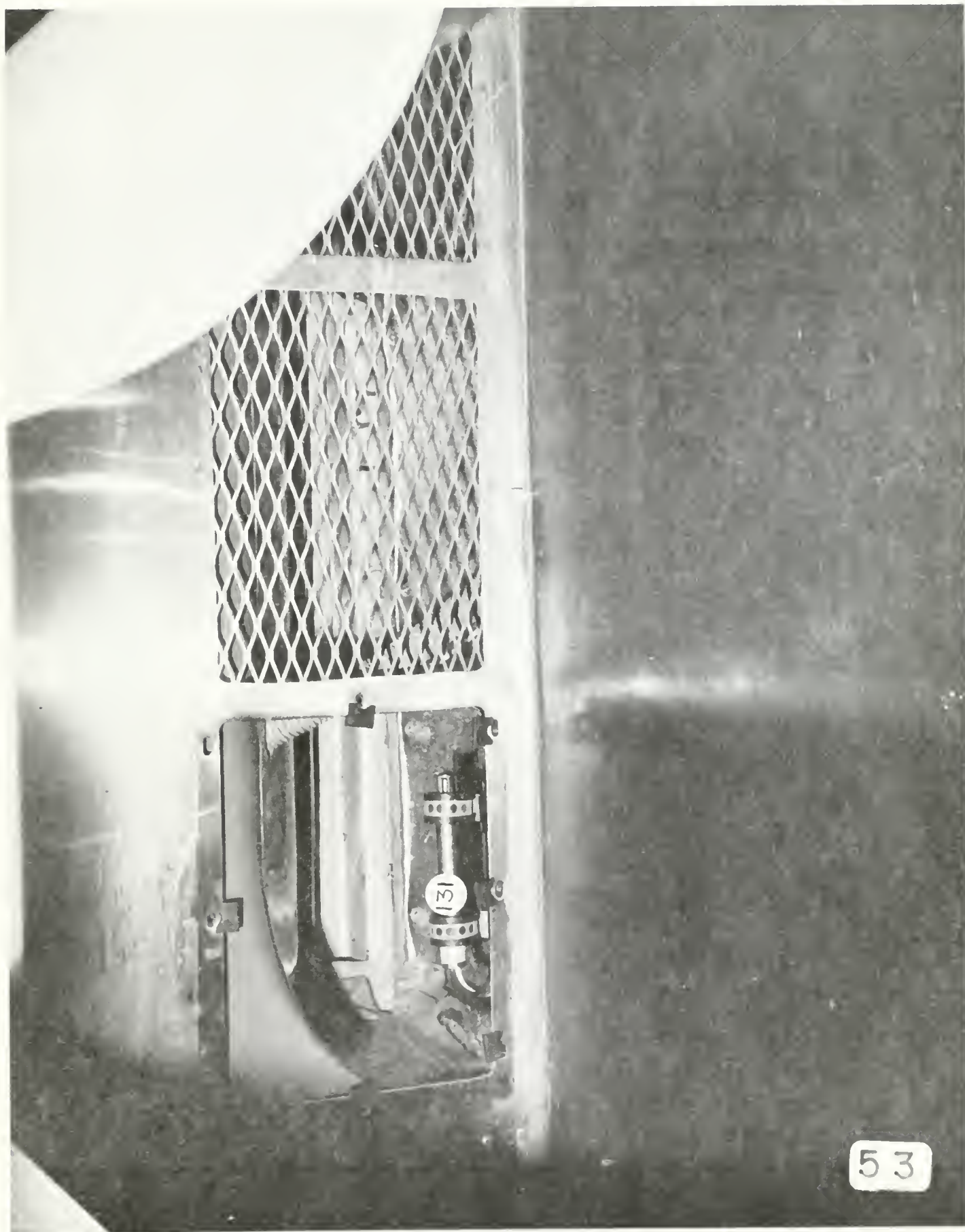


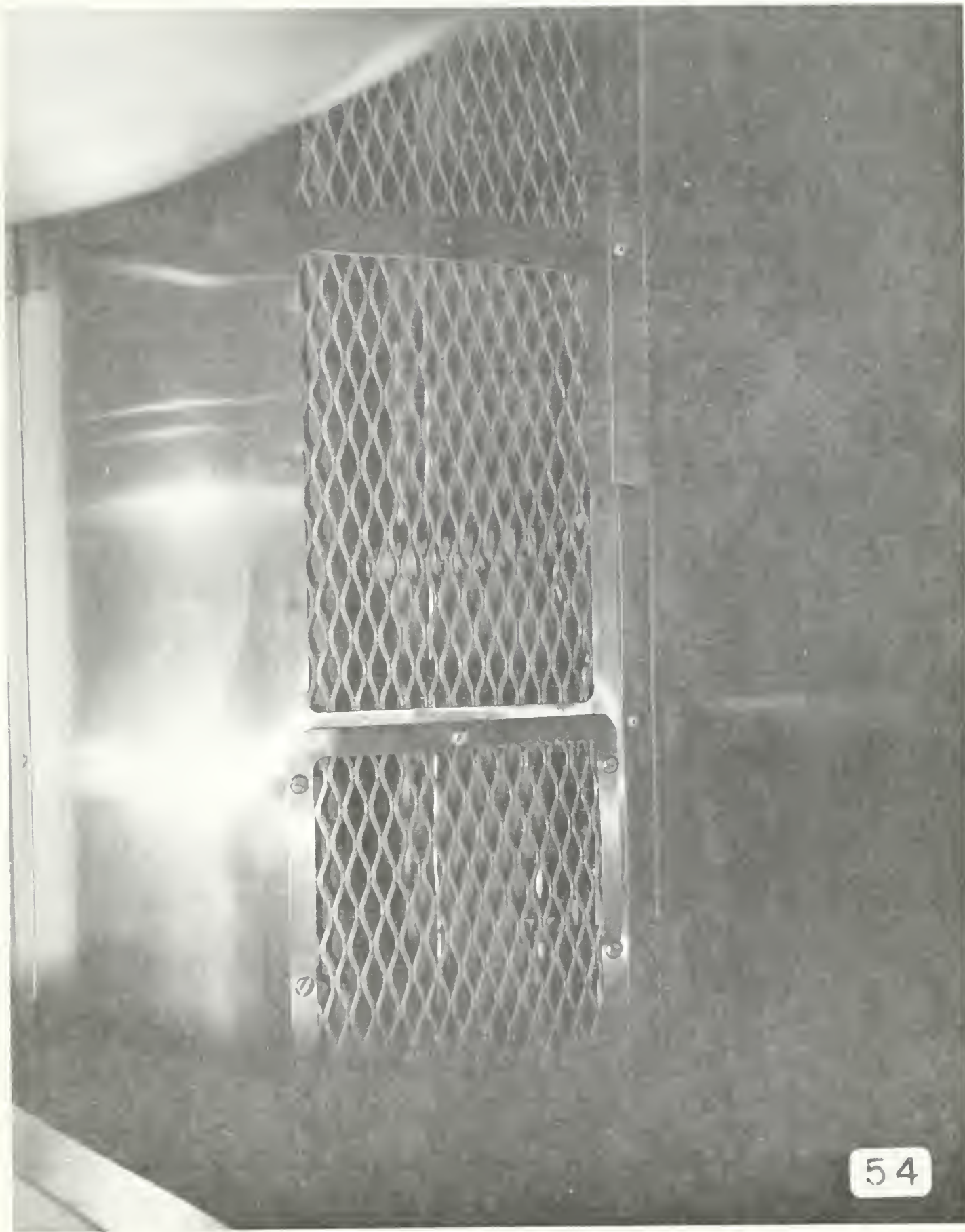


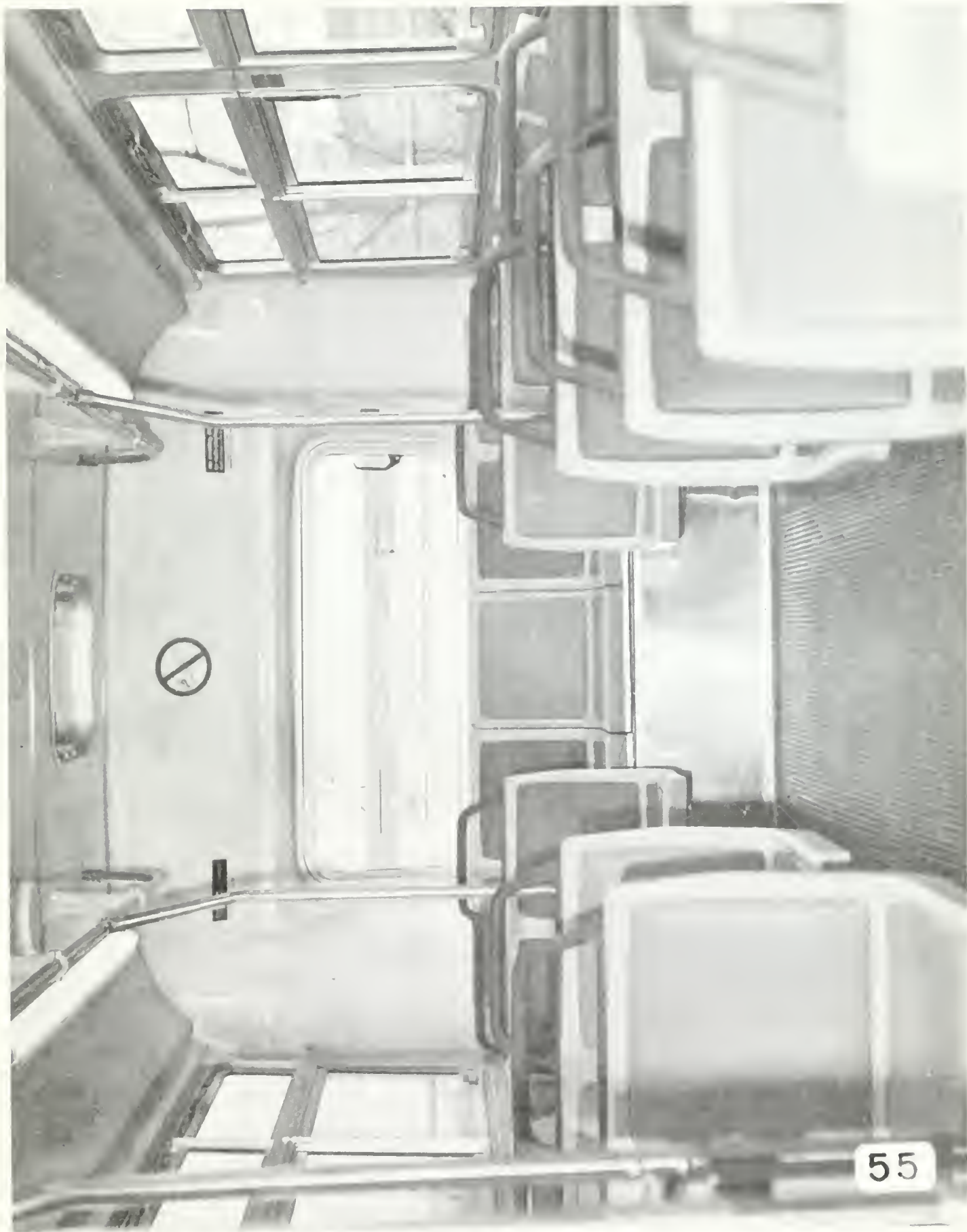


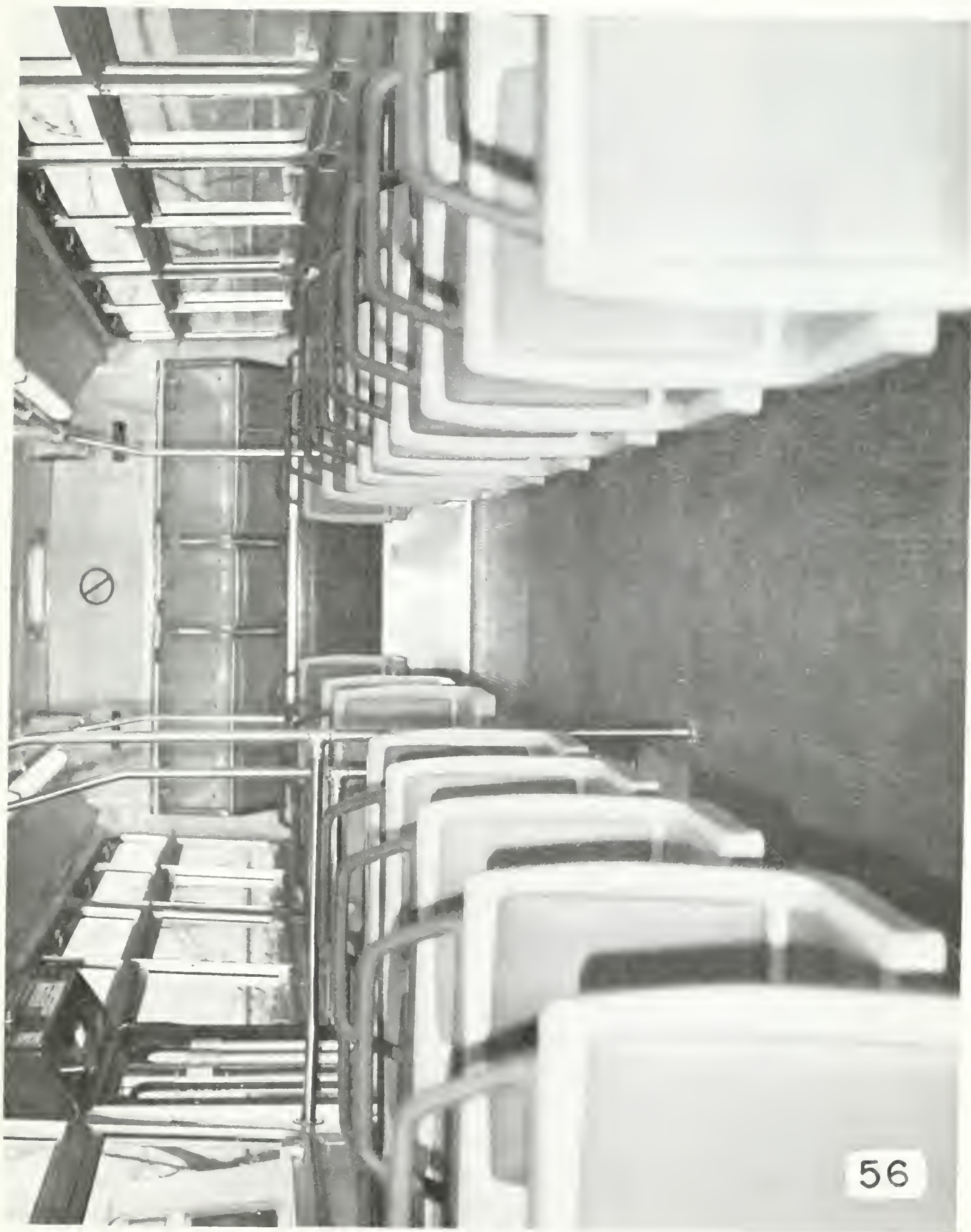




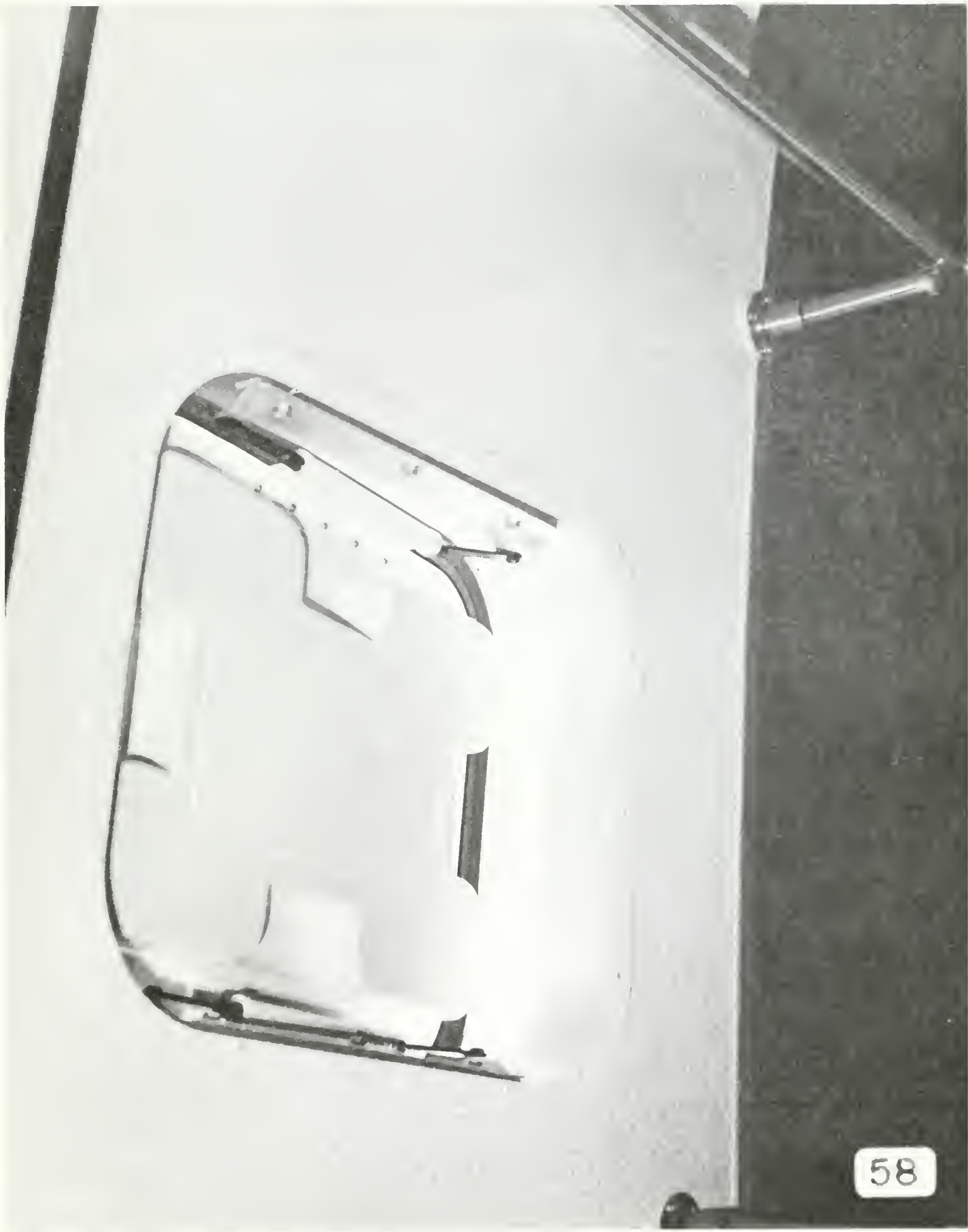


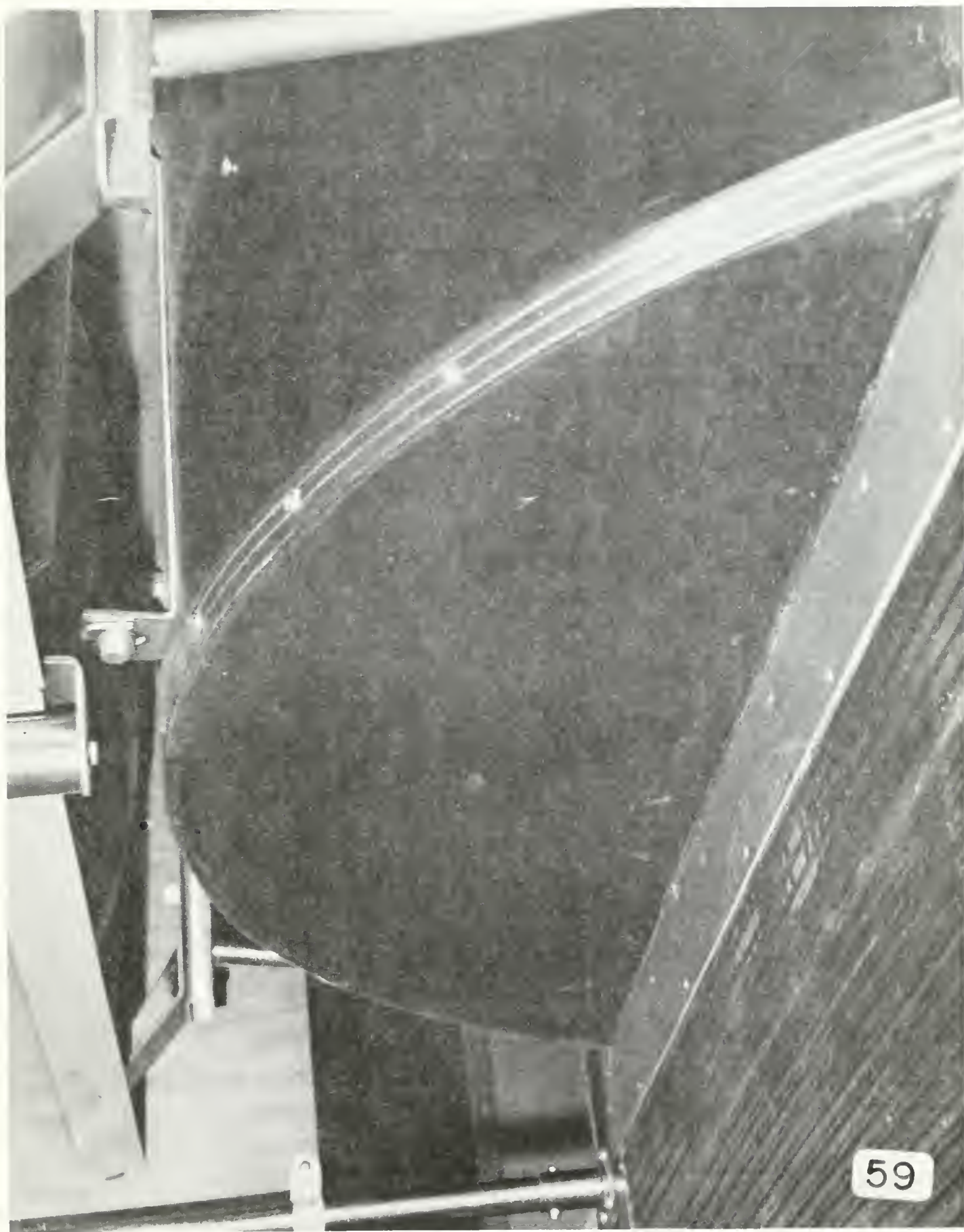


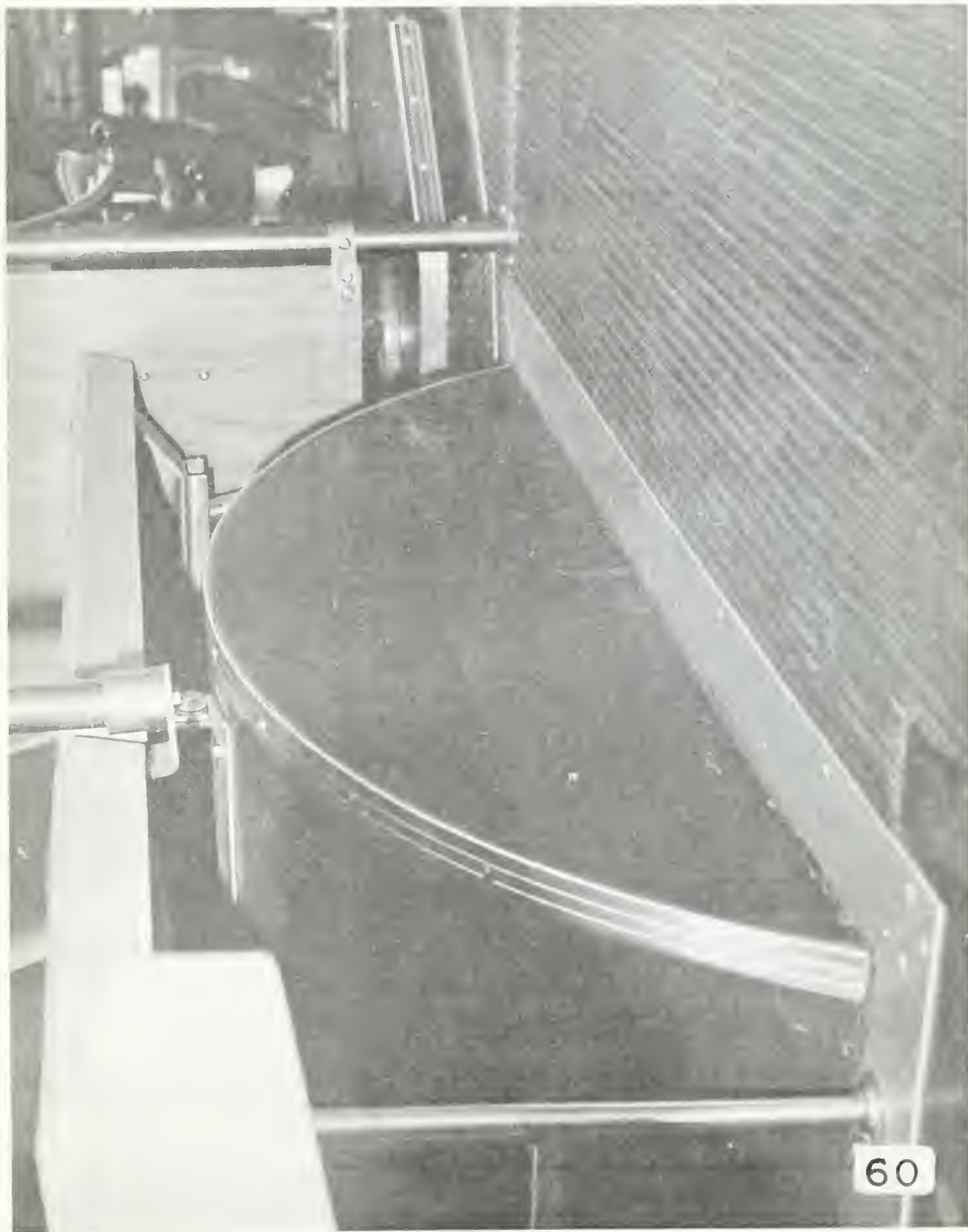


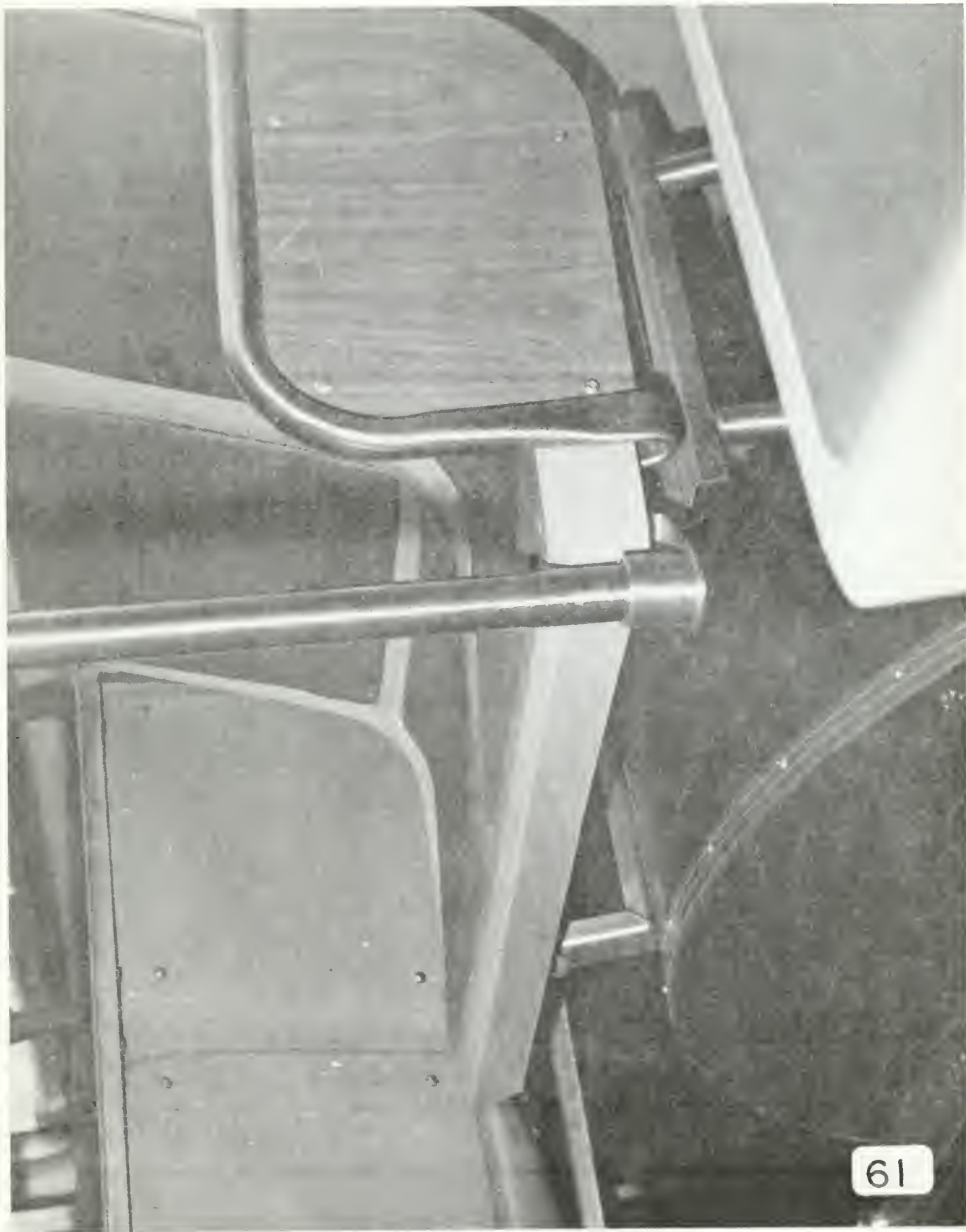




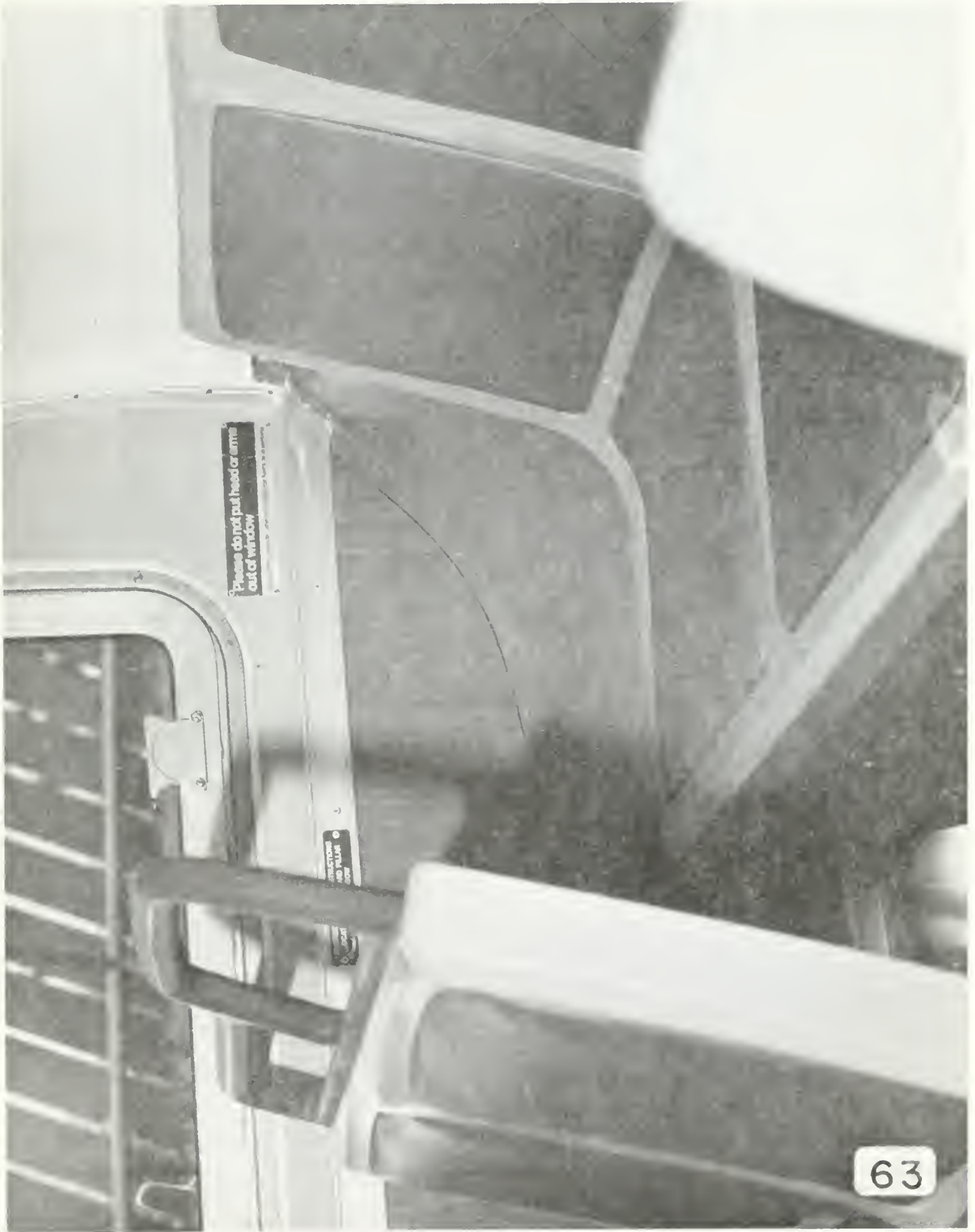












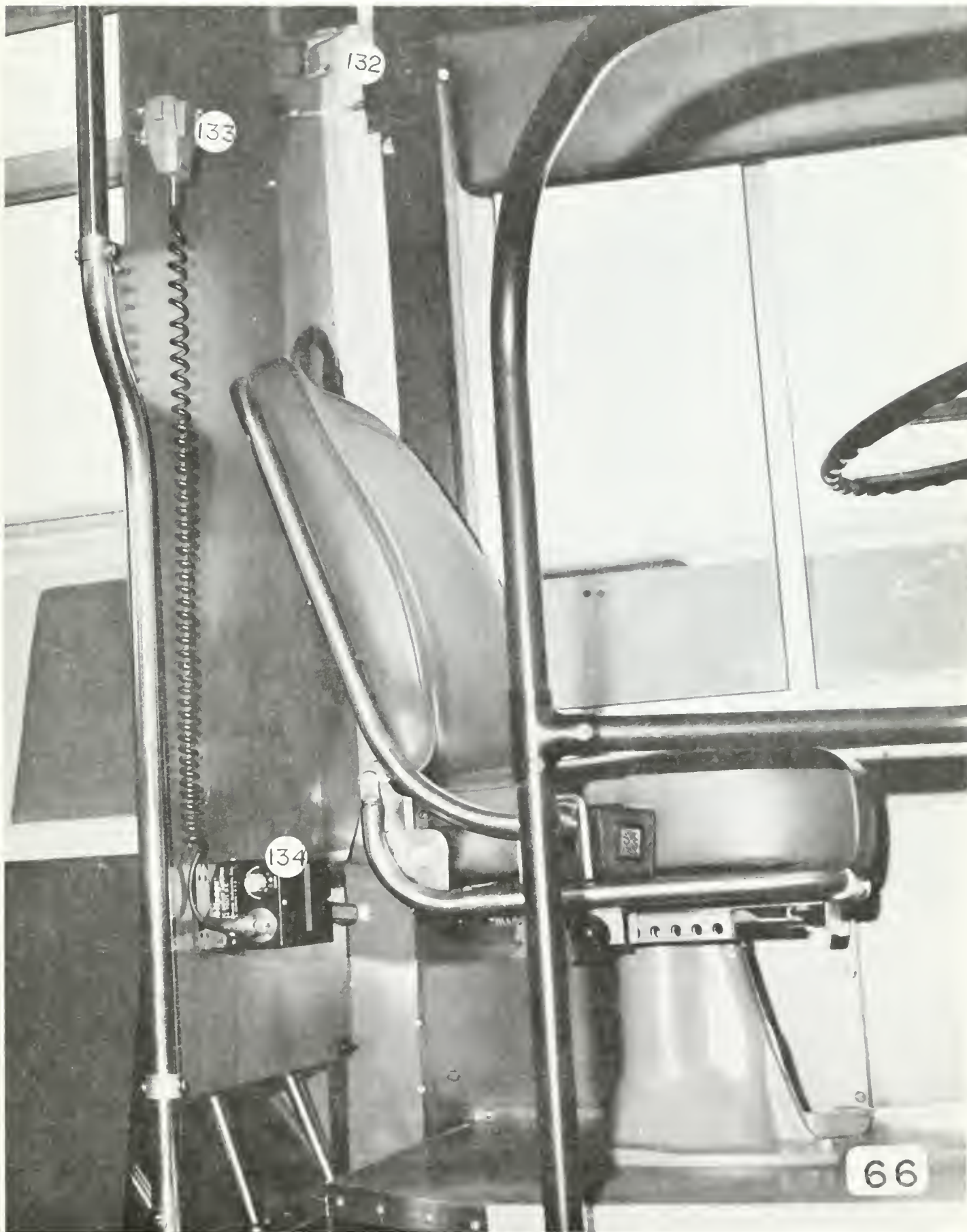
EMERGENCY EXIT
PULL RED HANDLE
DOWN AND HOLD
TO OPEN WINDOW
DO NOT PUSH

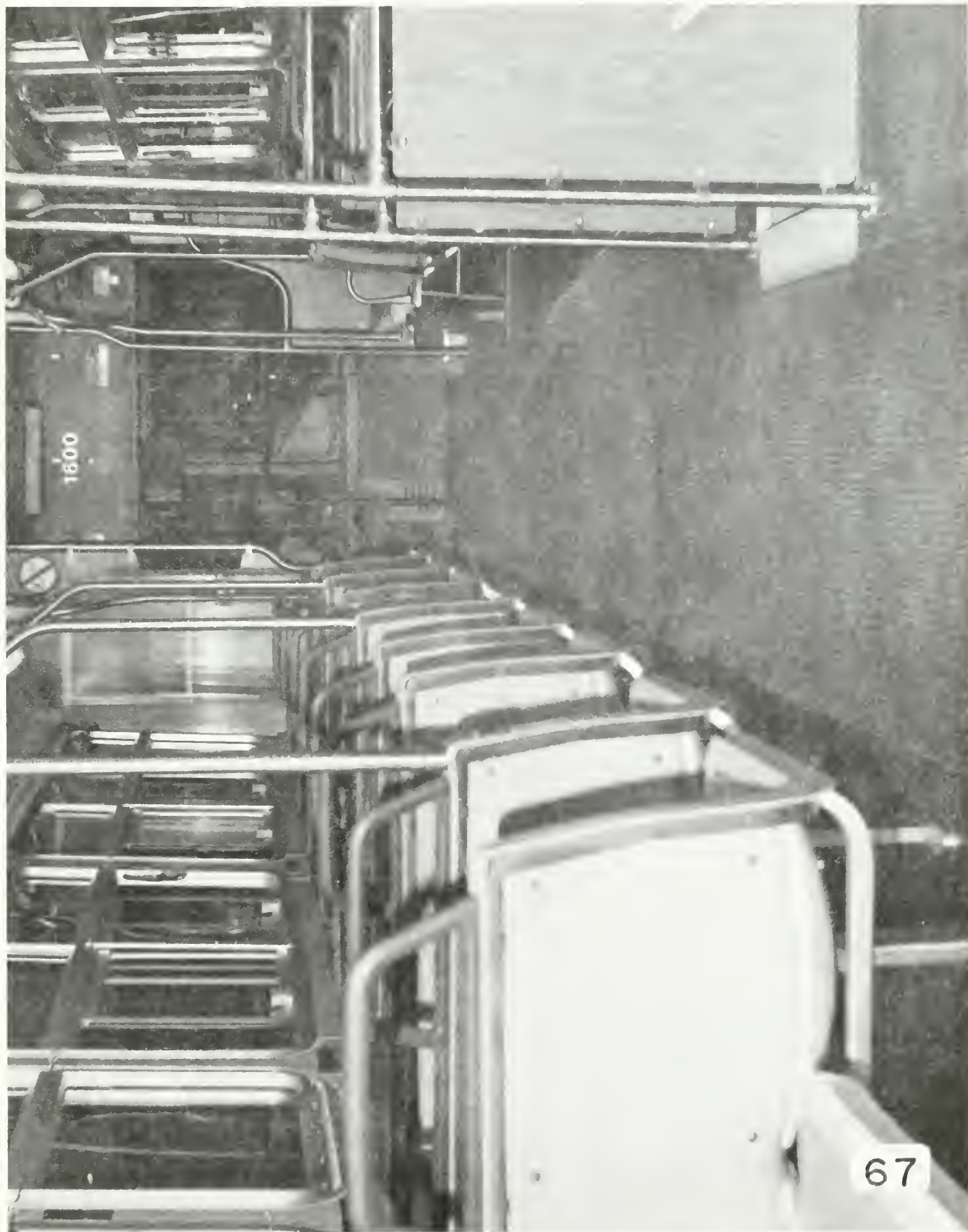
Please do not put head or arms
out of window

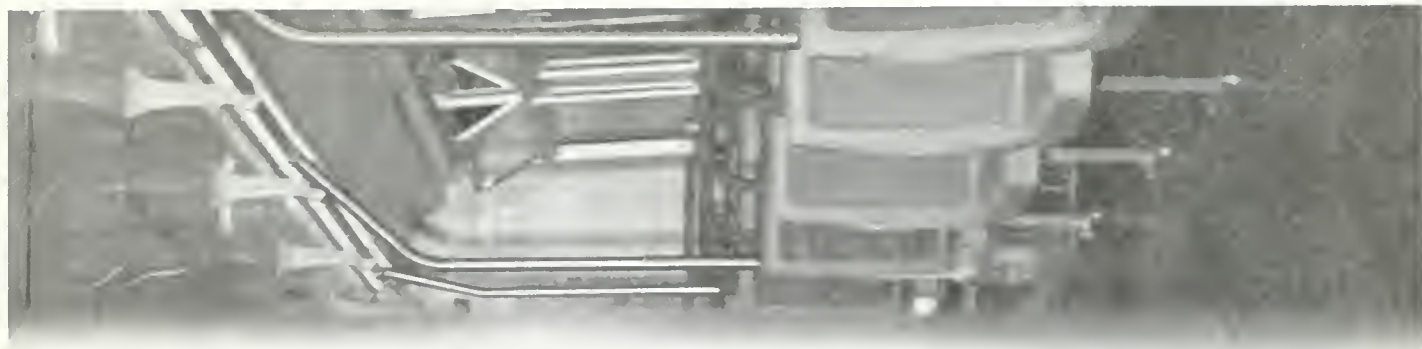
Favor no sacar la cabeza o los brazos fuera de la ventana

EMERGENCY EXIT INSTRUCTIONS
LOCATED IN CENTER
OF THIS WINDOW PANEL ↑



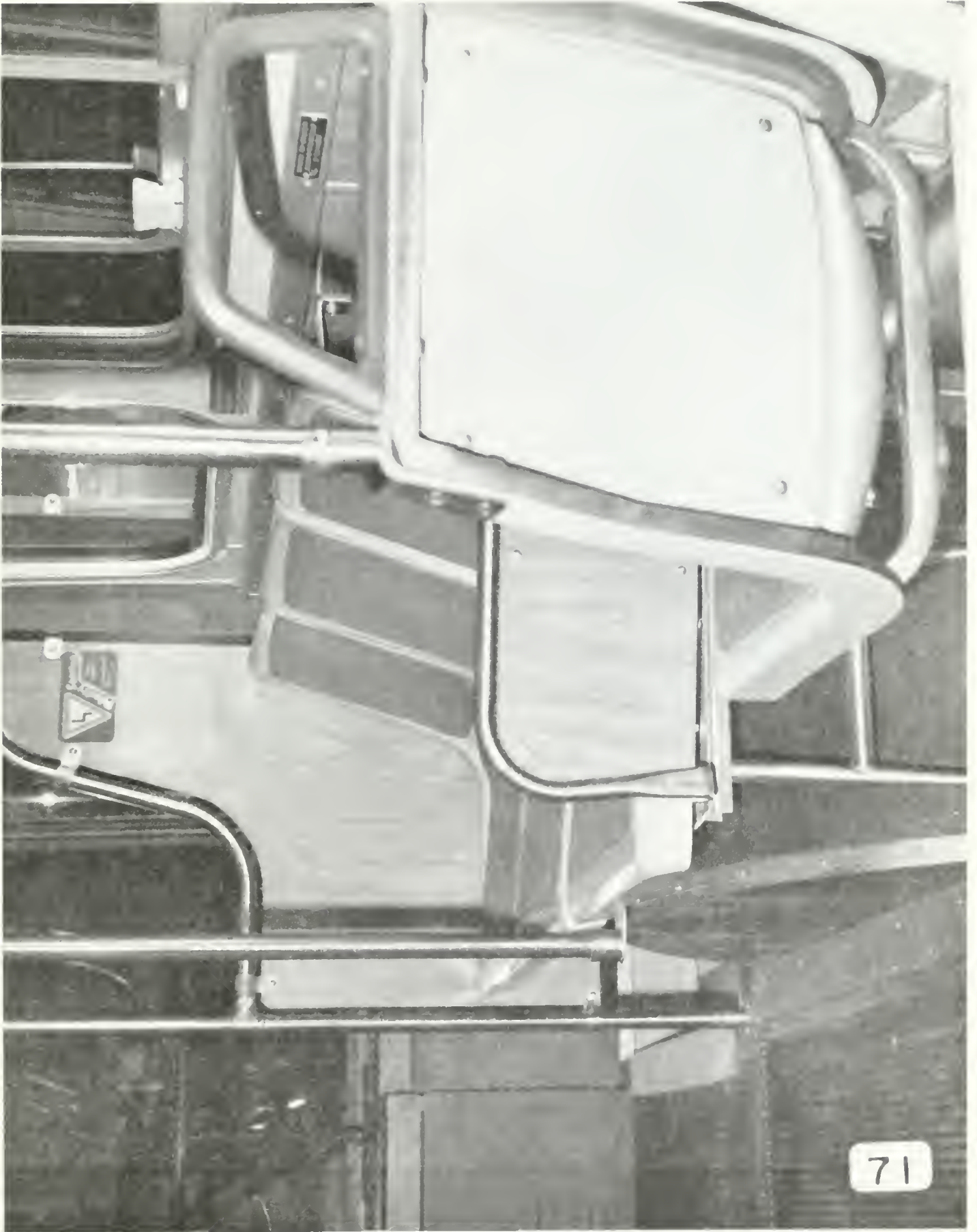


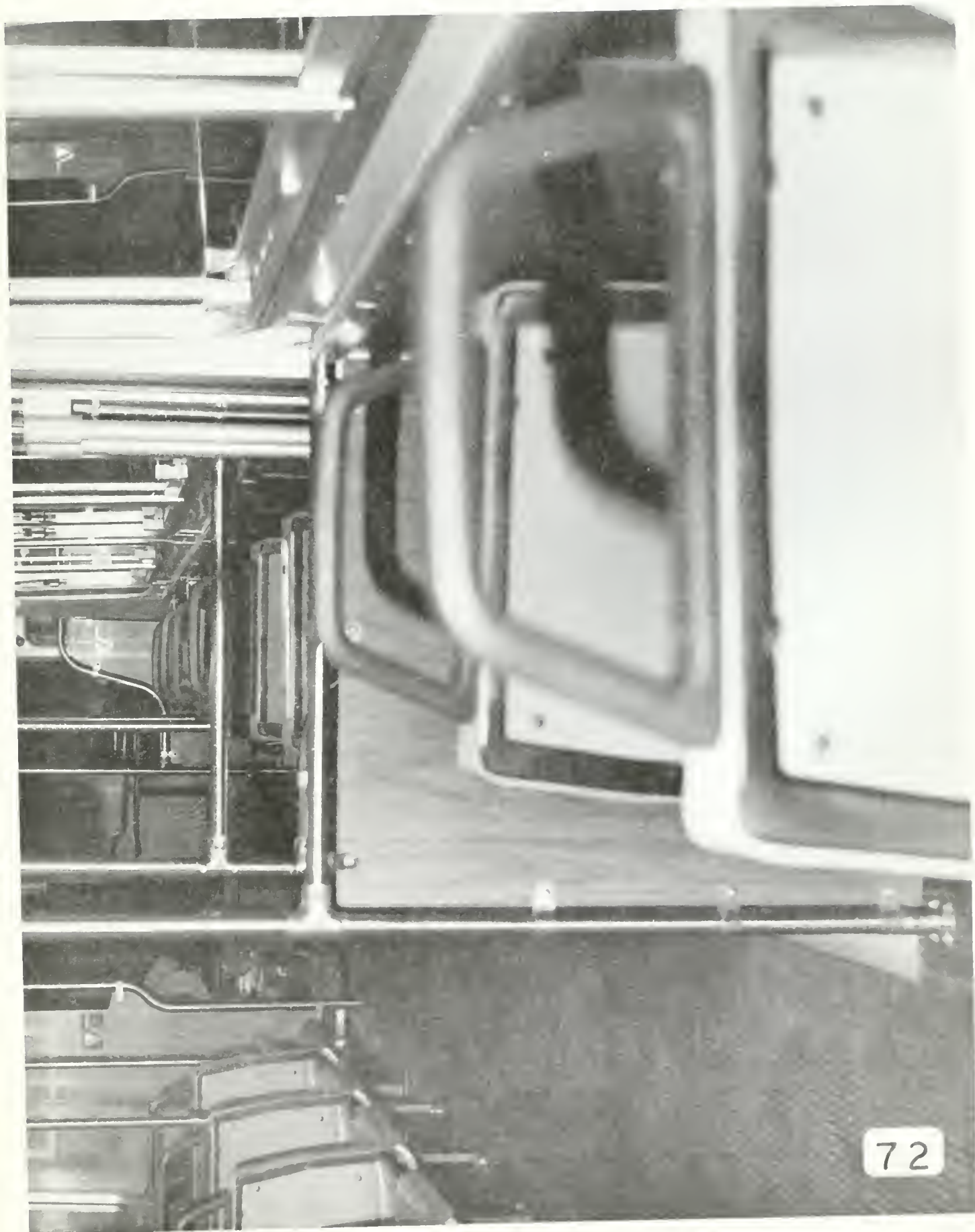


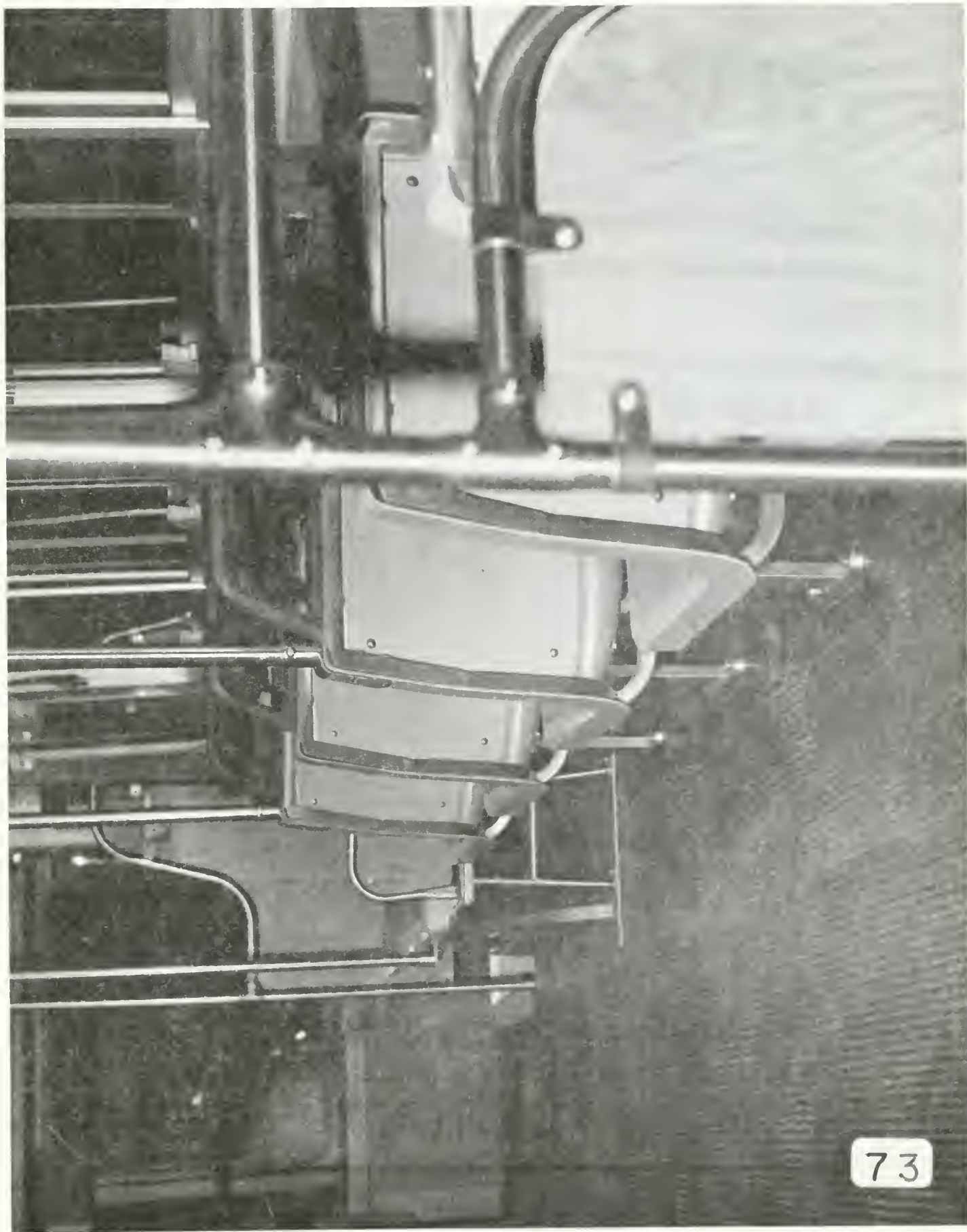


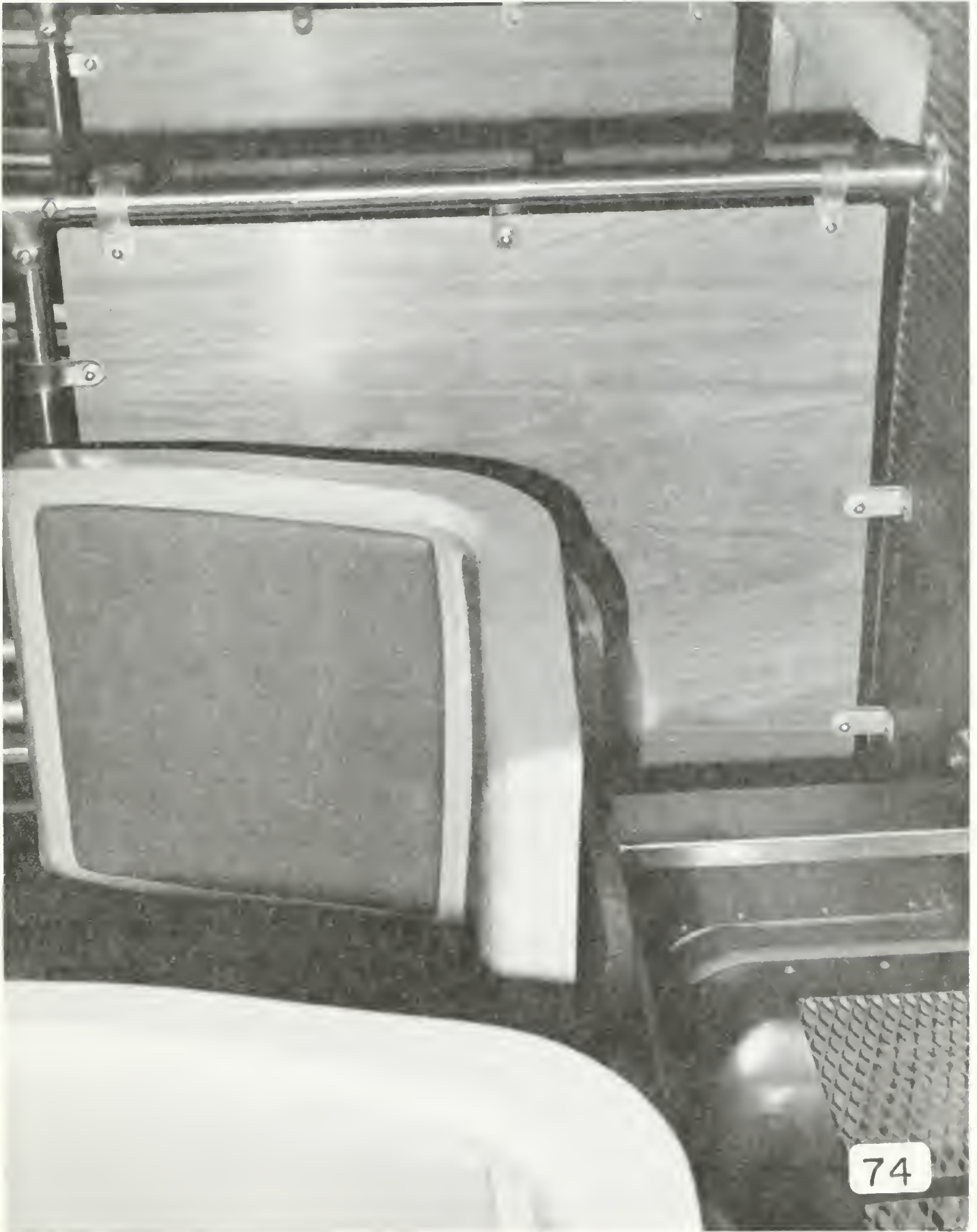


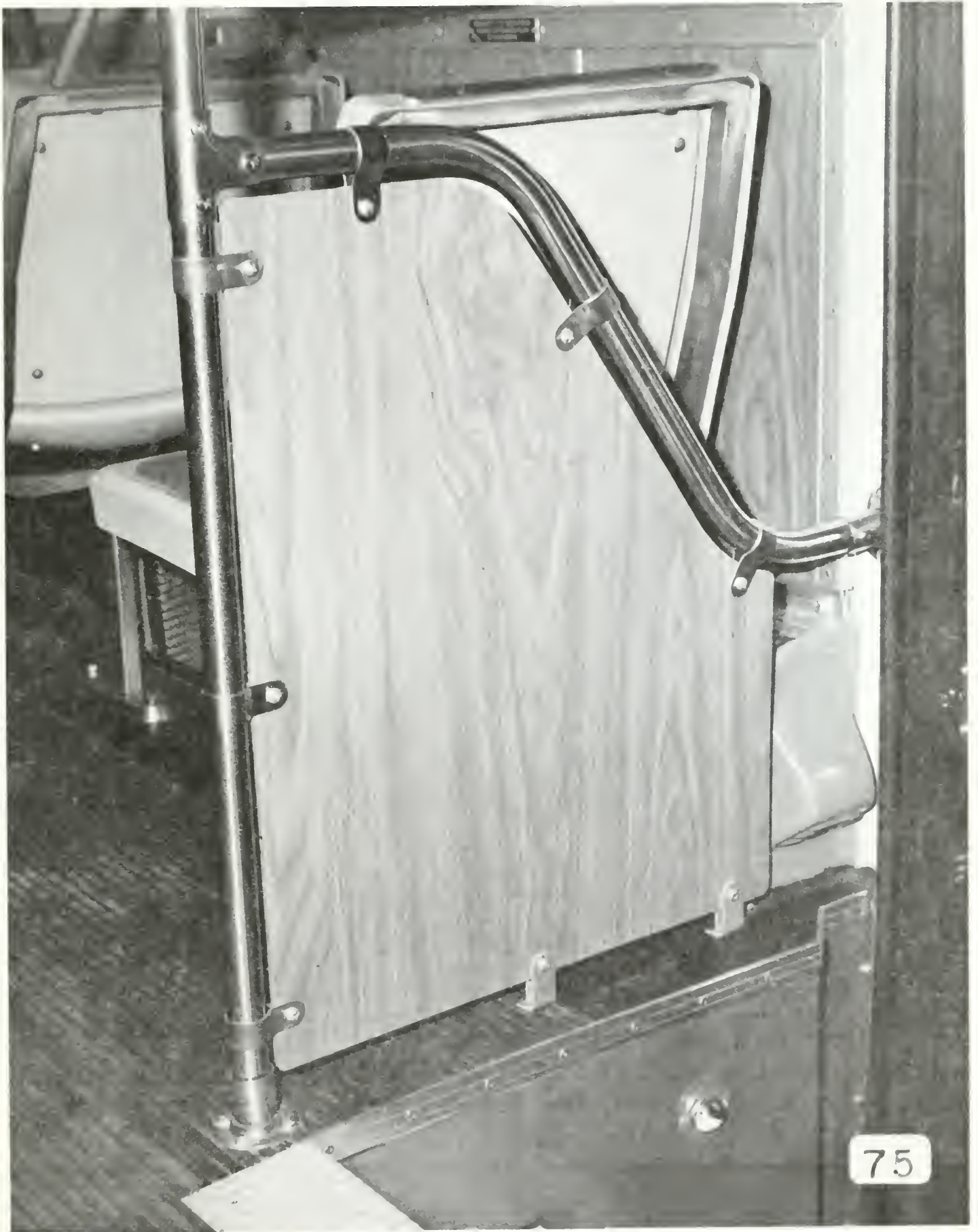


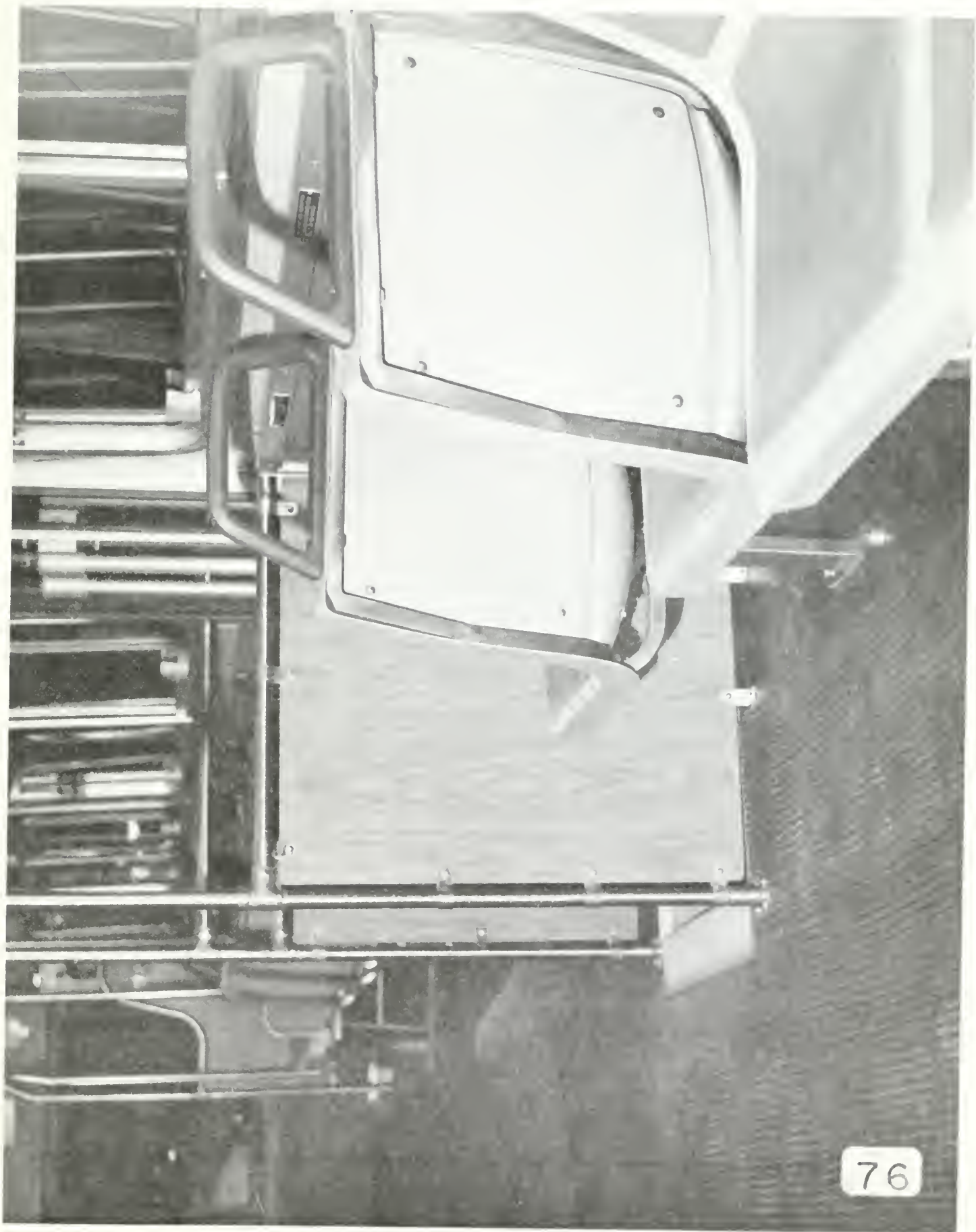


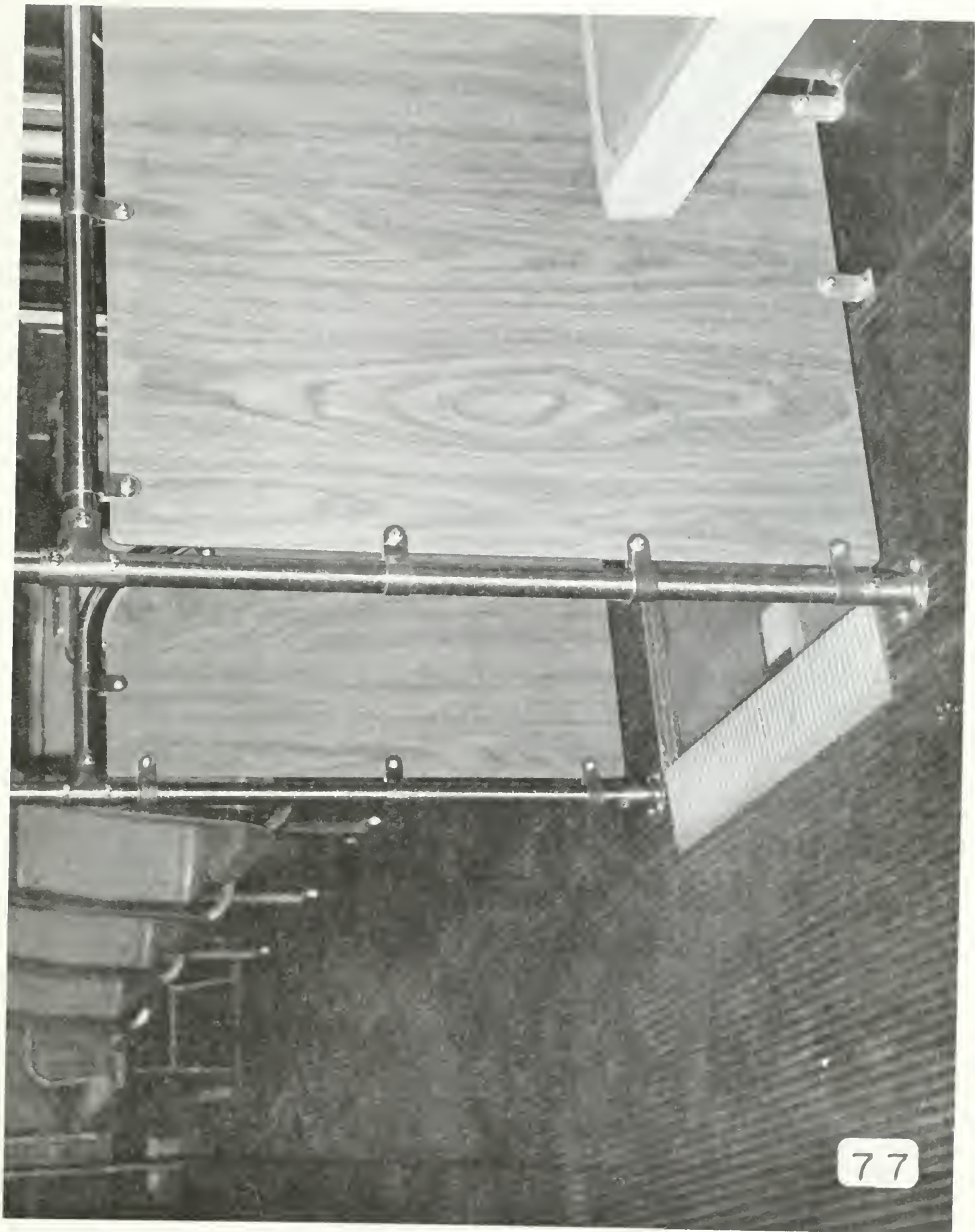


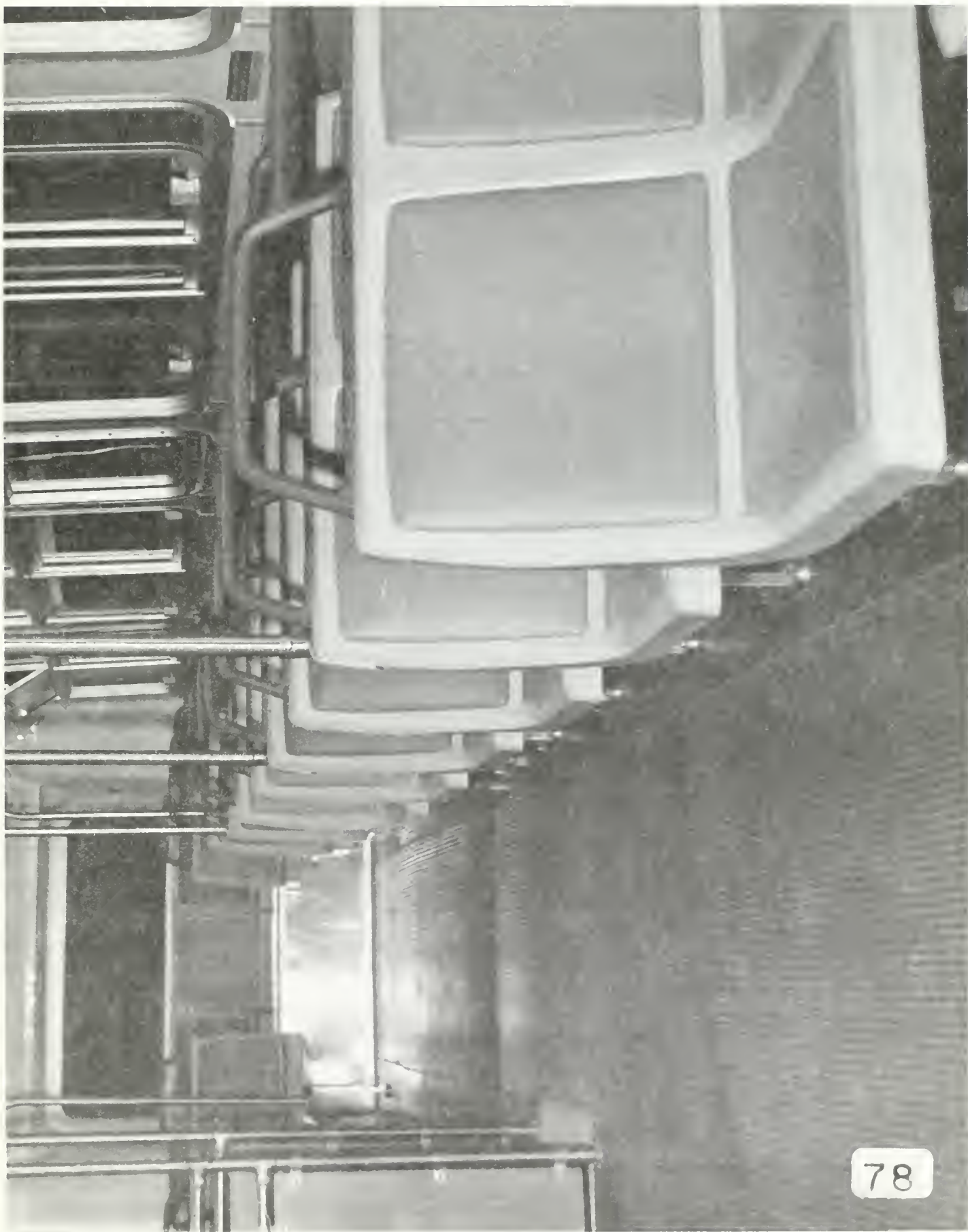




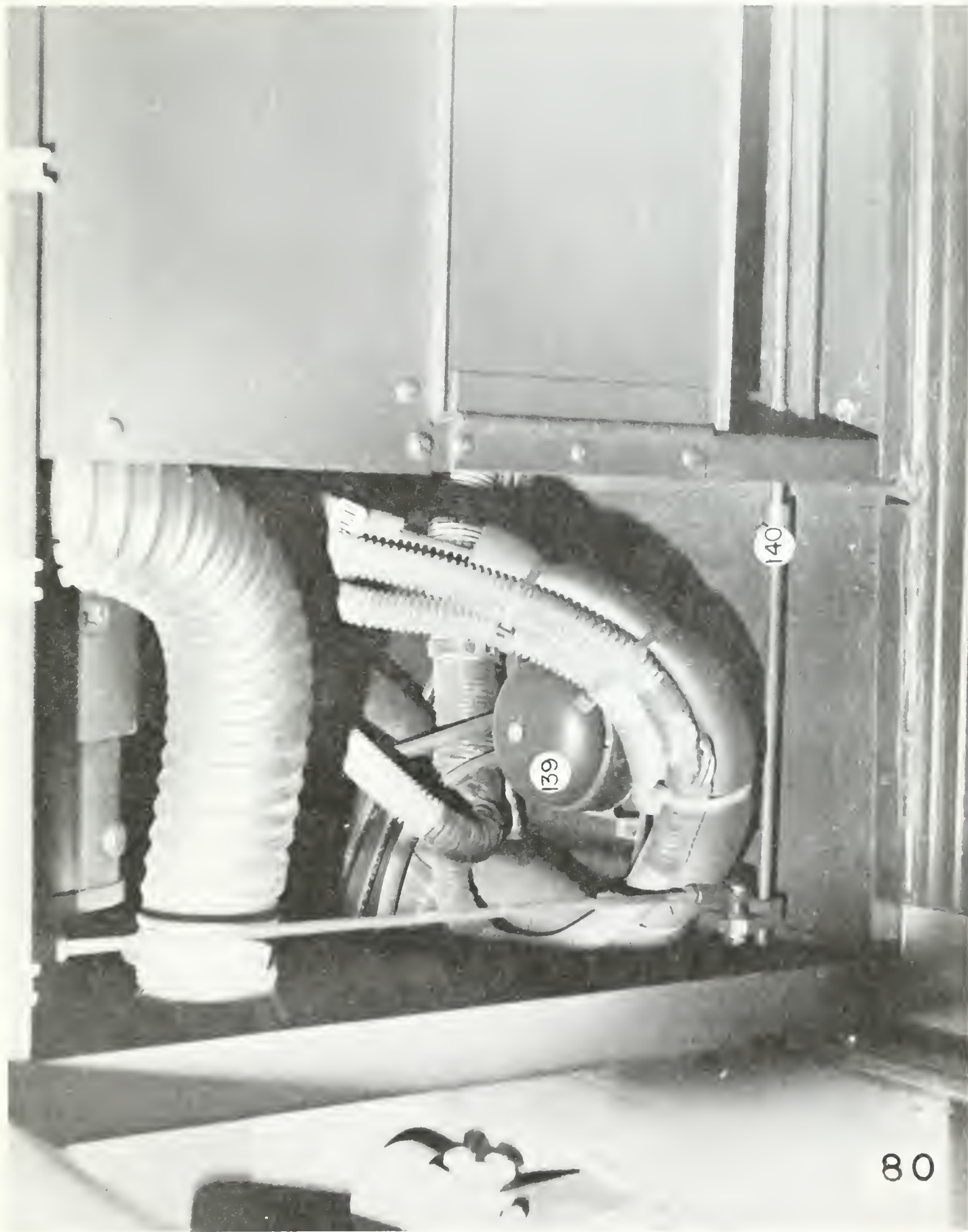


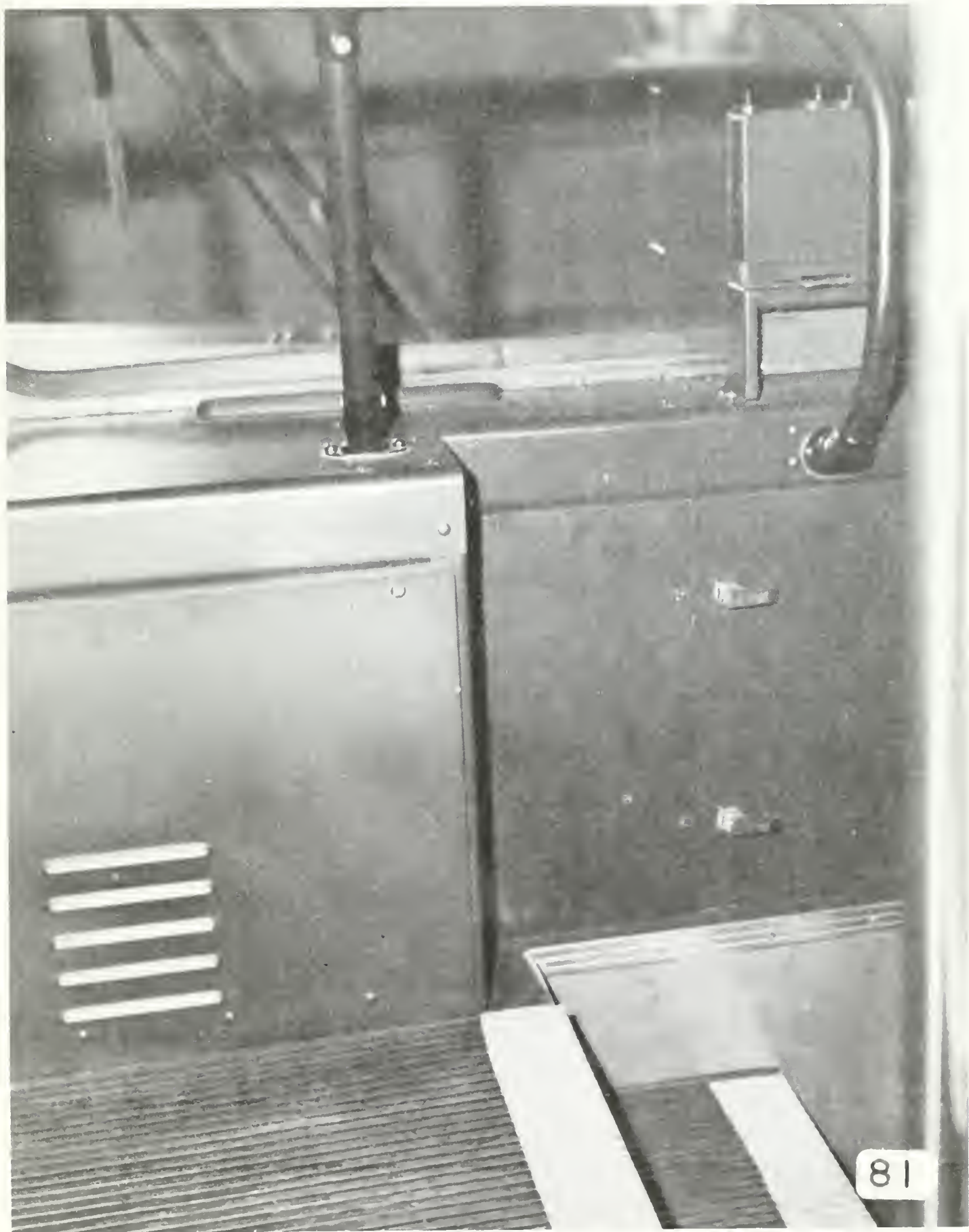


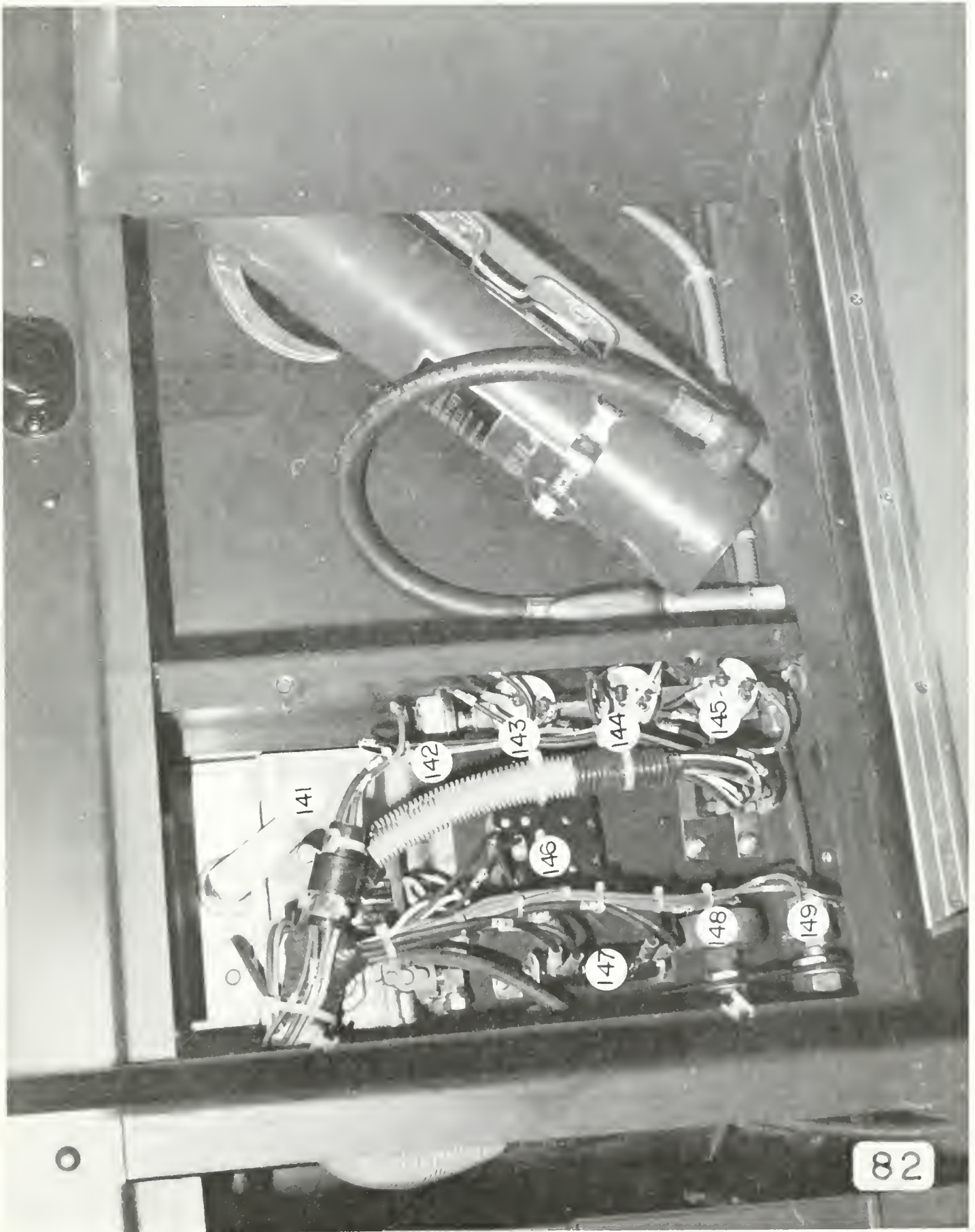


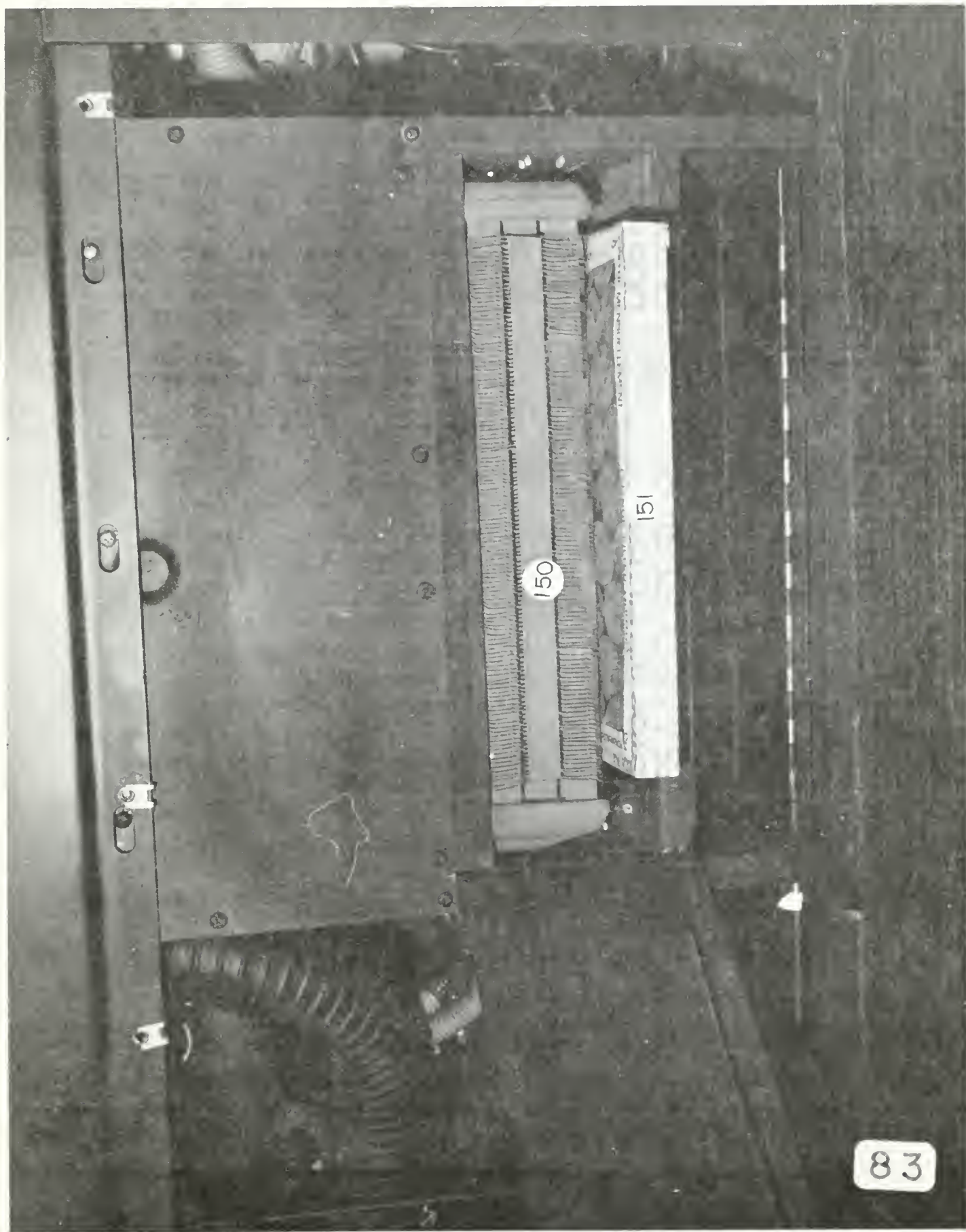


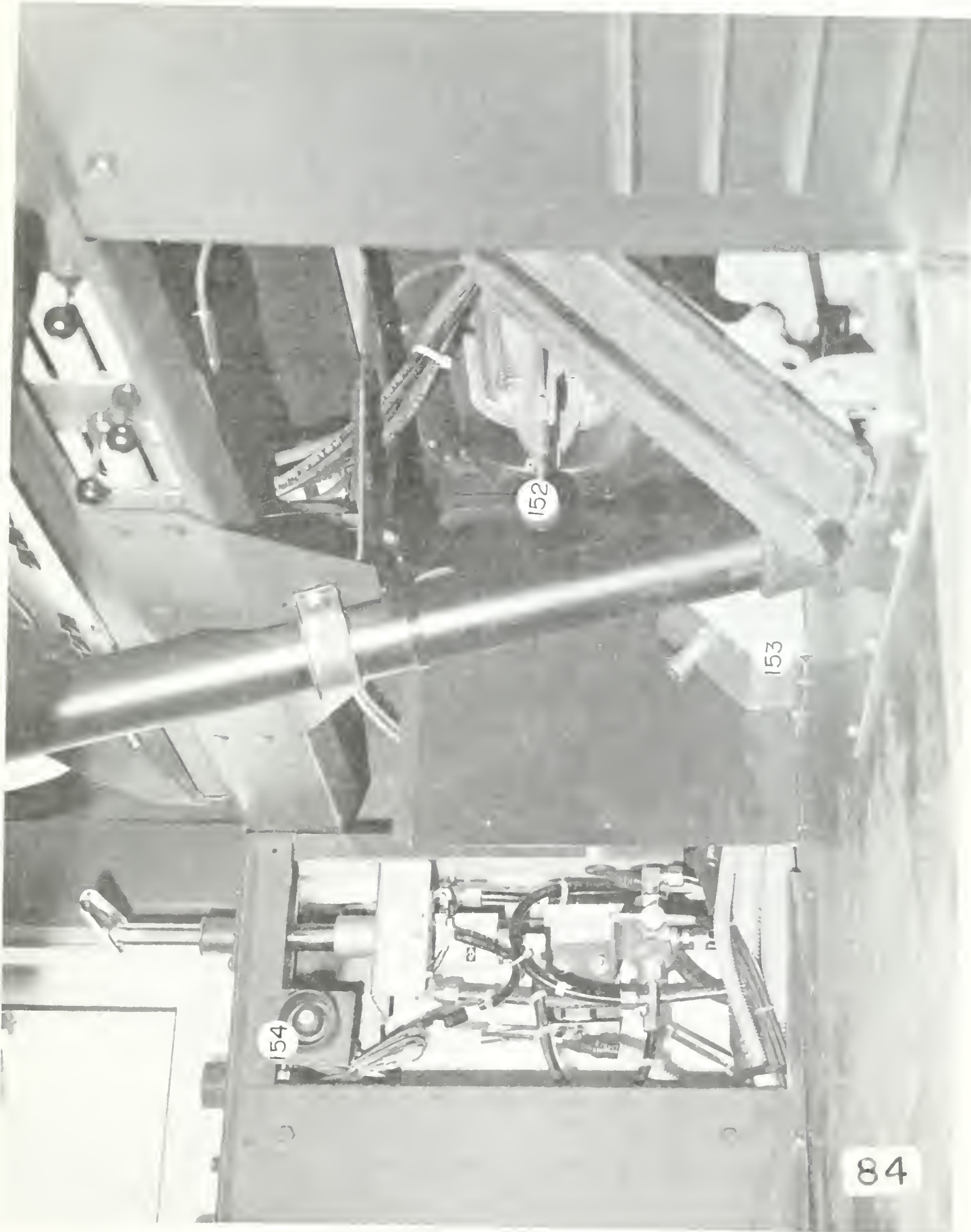


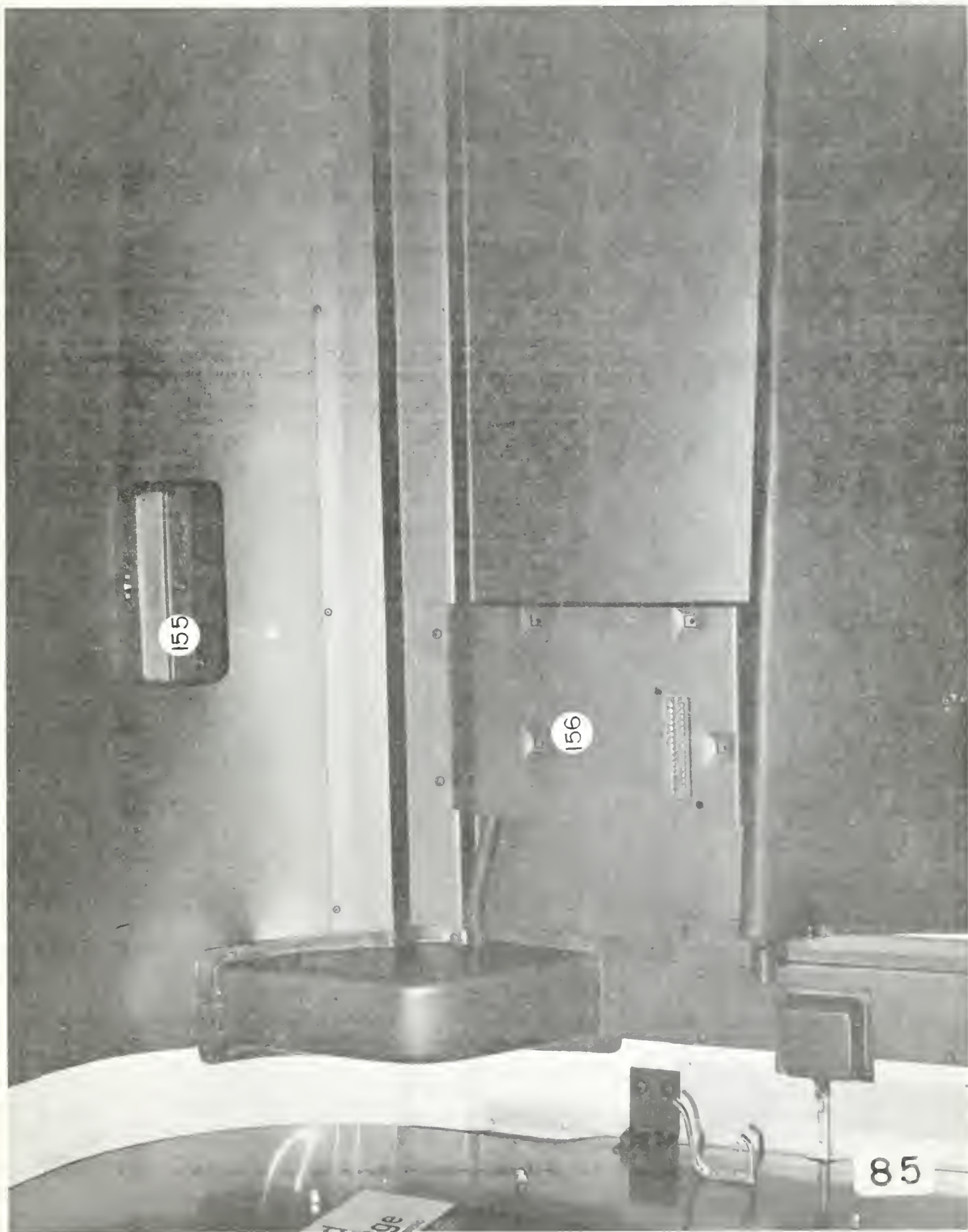


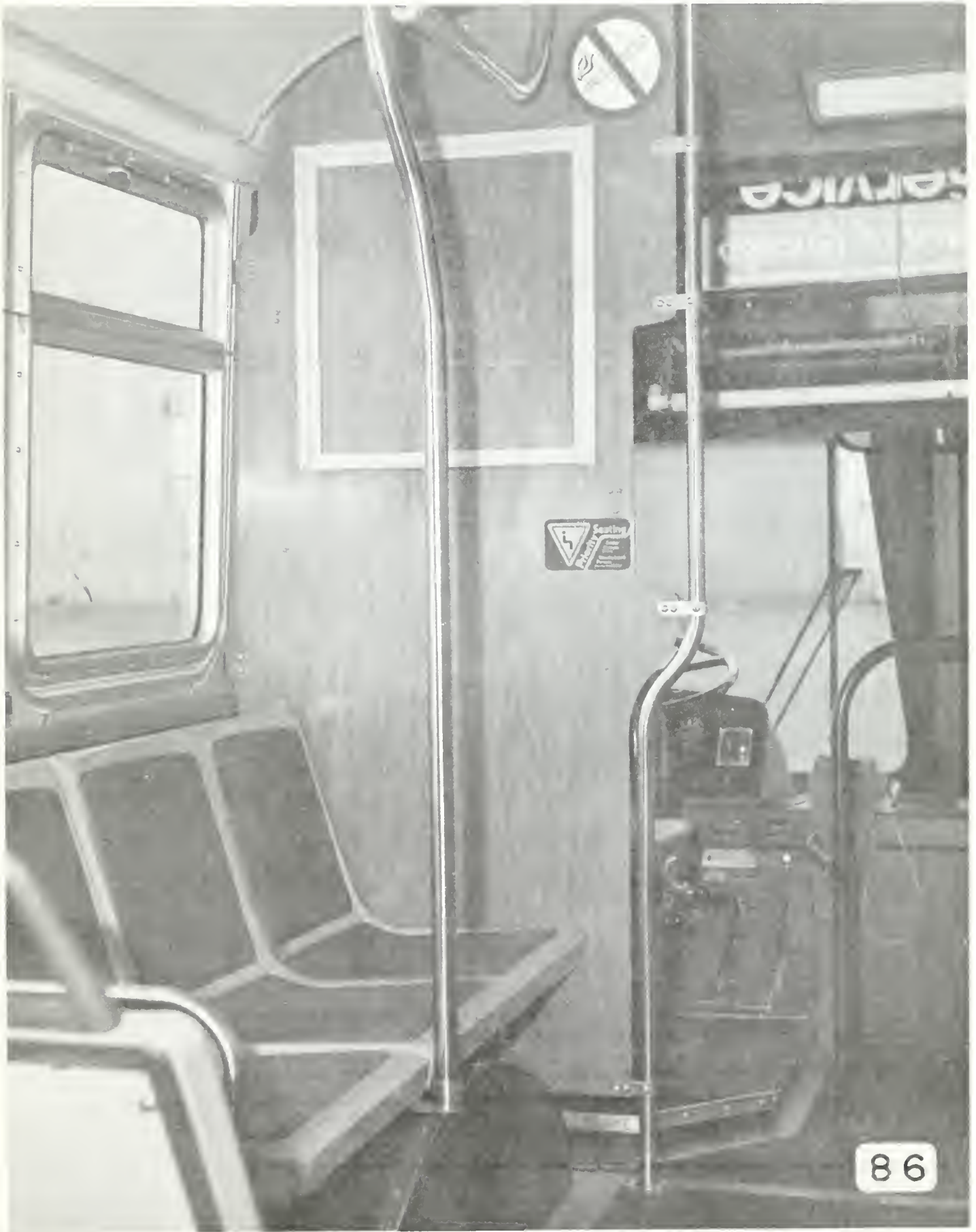


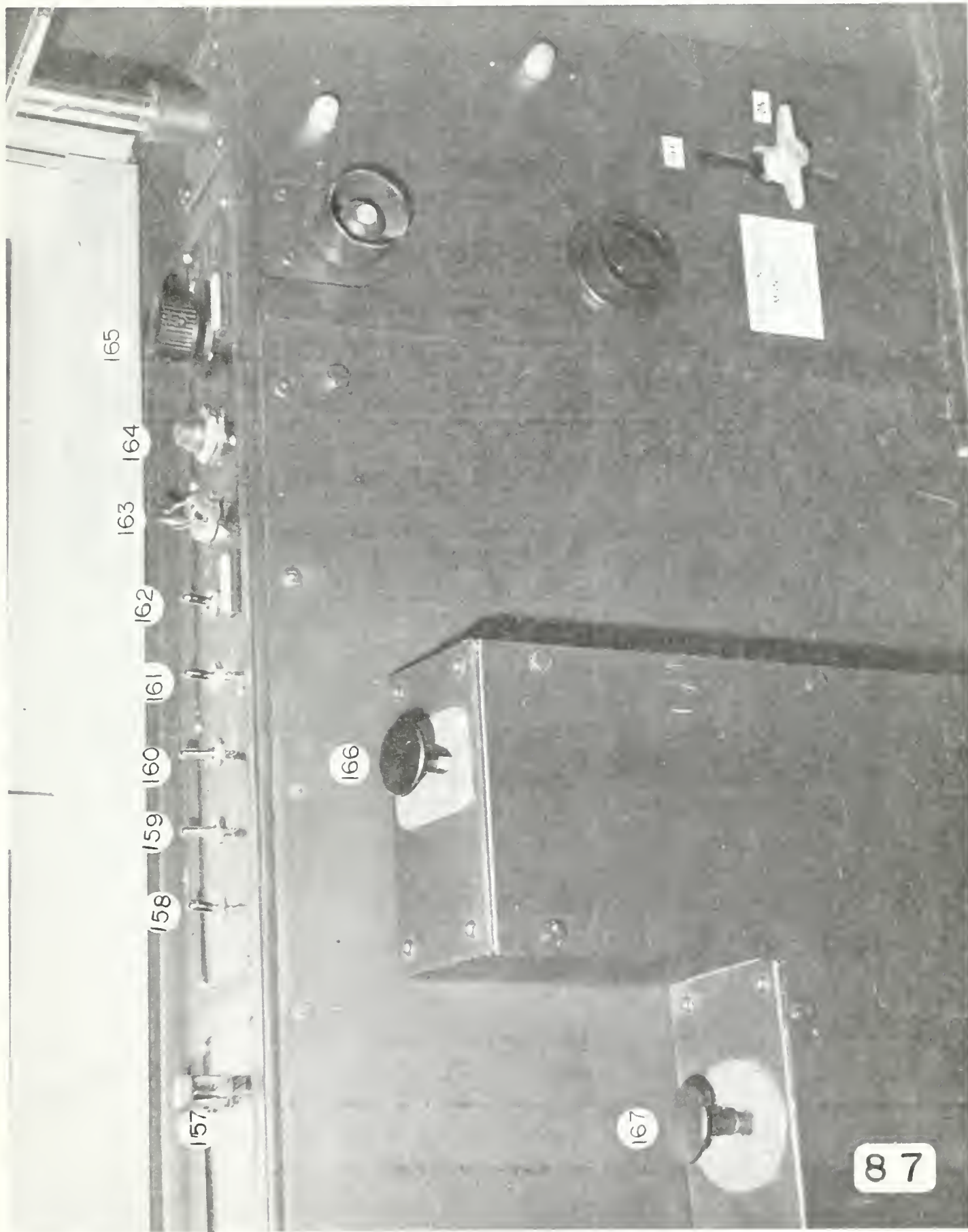












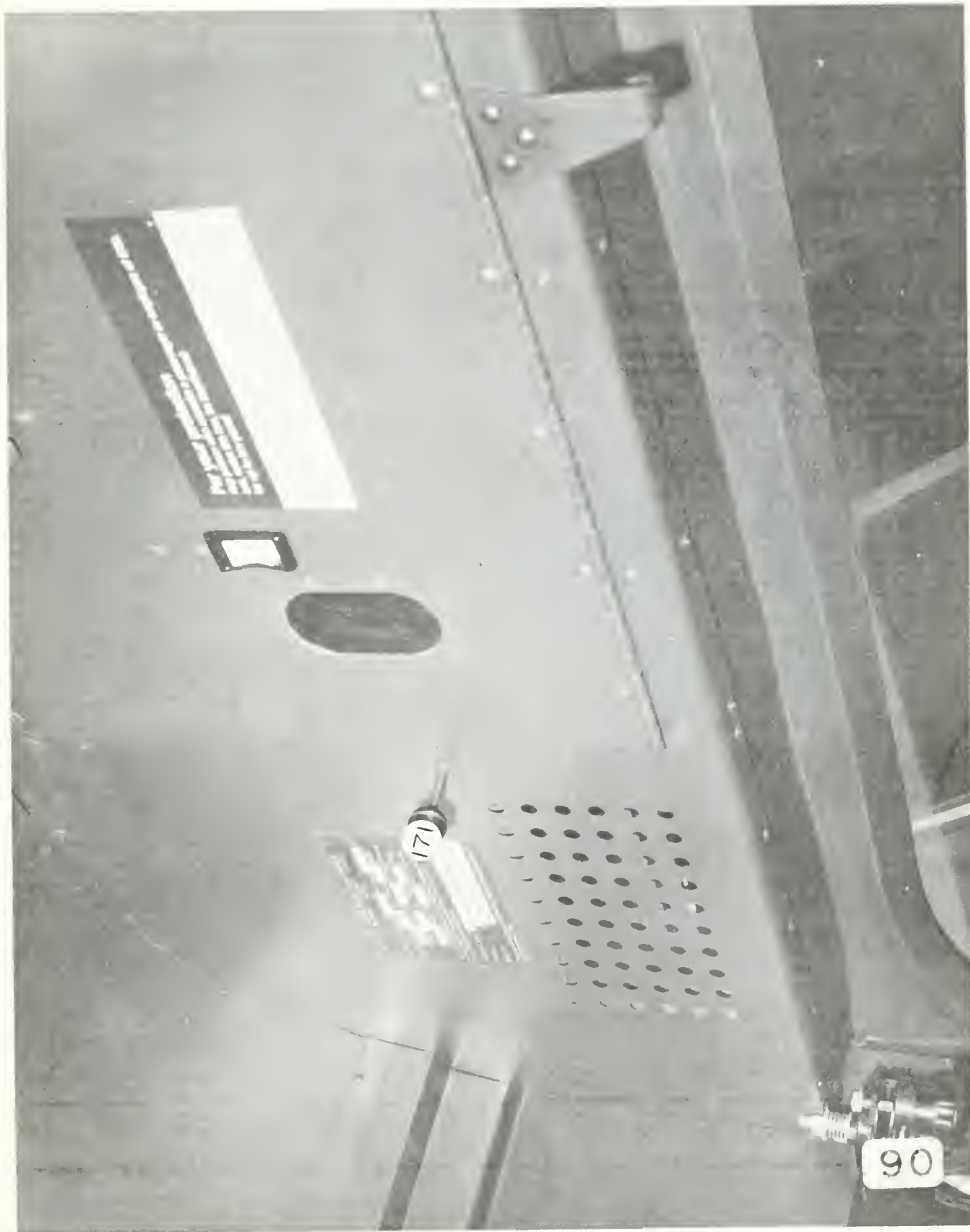


Not in Service

WARNING
HIGH VOLTAGE

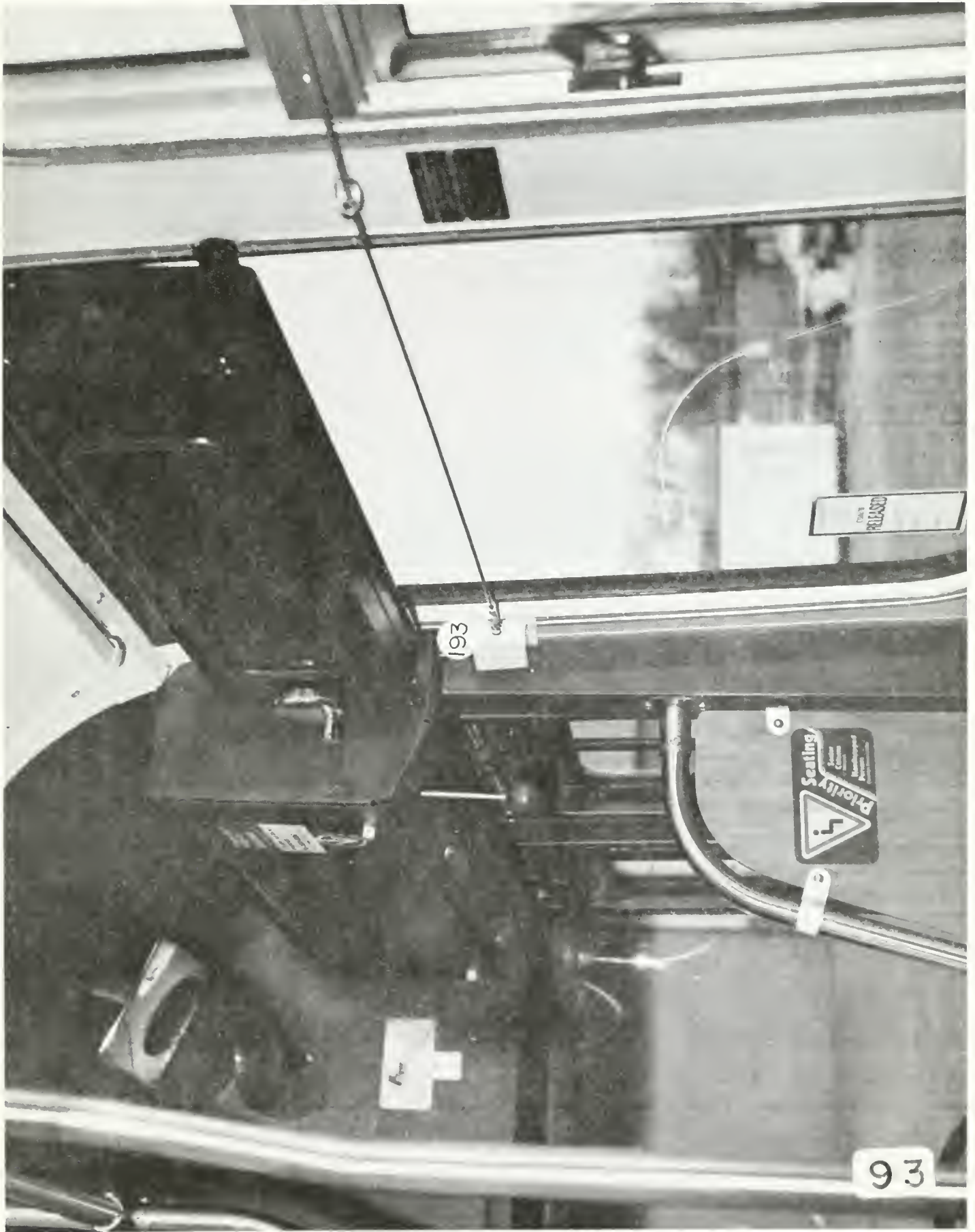
170

89







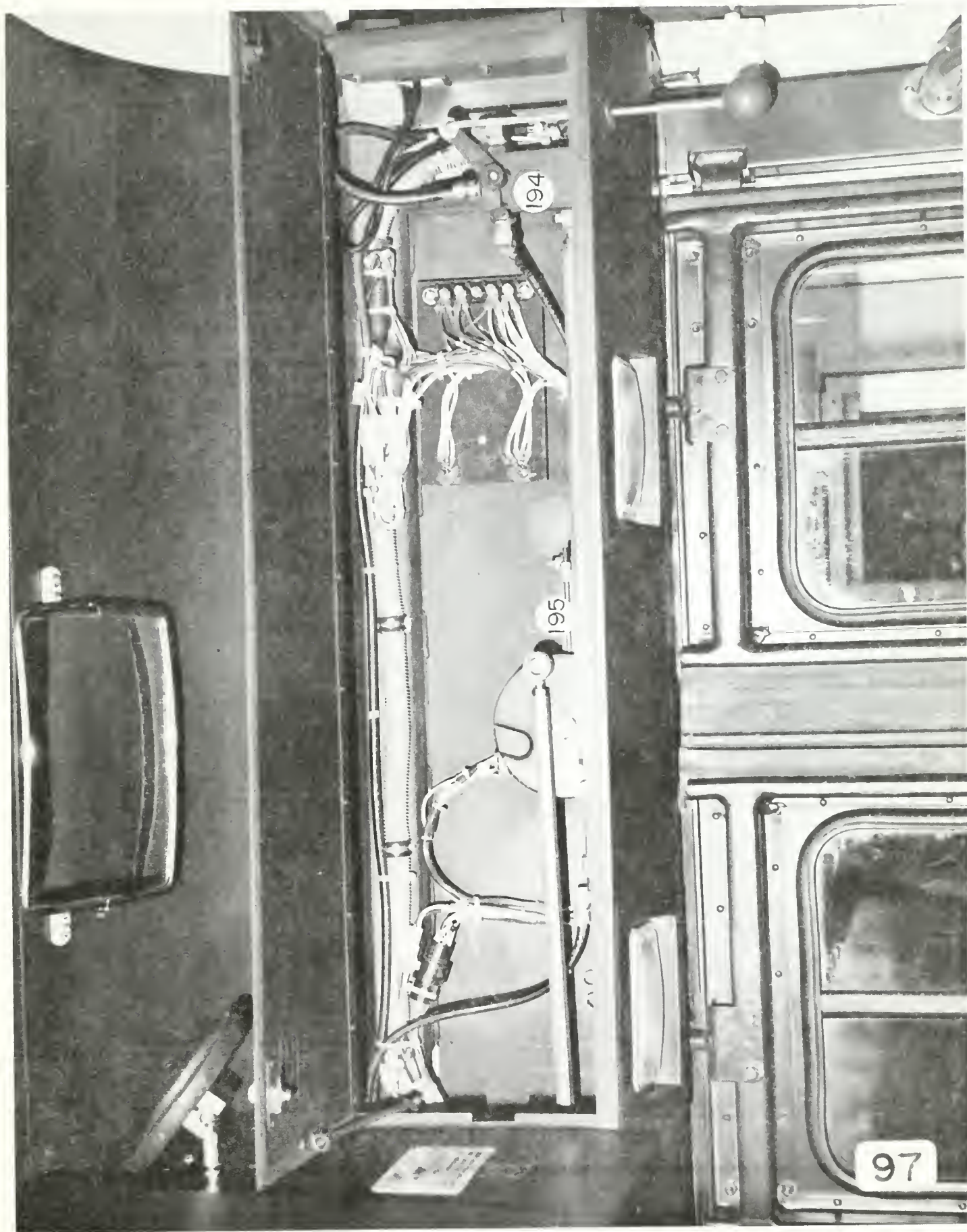


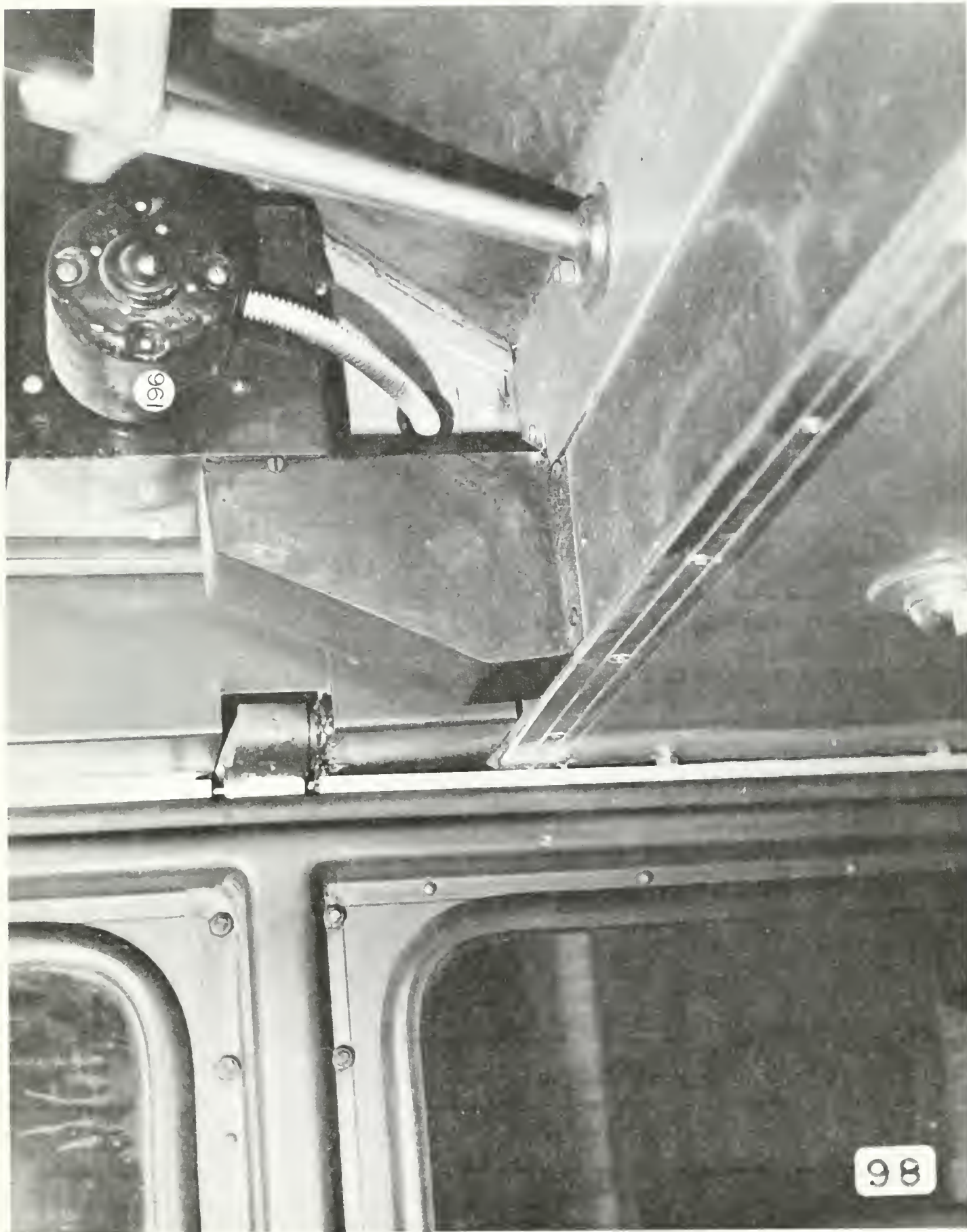




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'Easy-out' exit doors
- Wait for green light, then
push door handle gently

Puertas de salida 'Easy-out'
- Espere por la luz verde y luego
empuje suavemente la agarradera
de la puerta

Stop request
signal

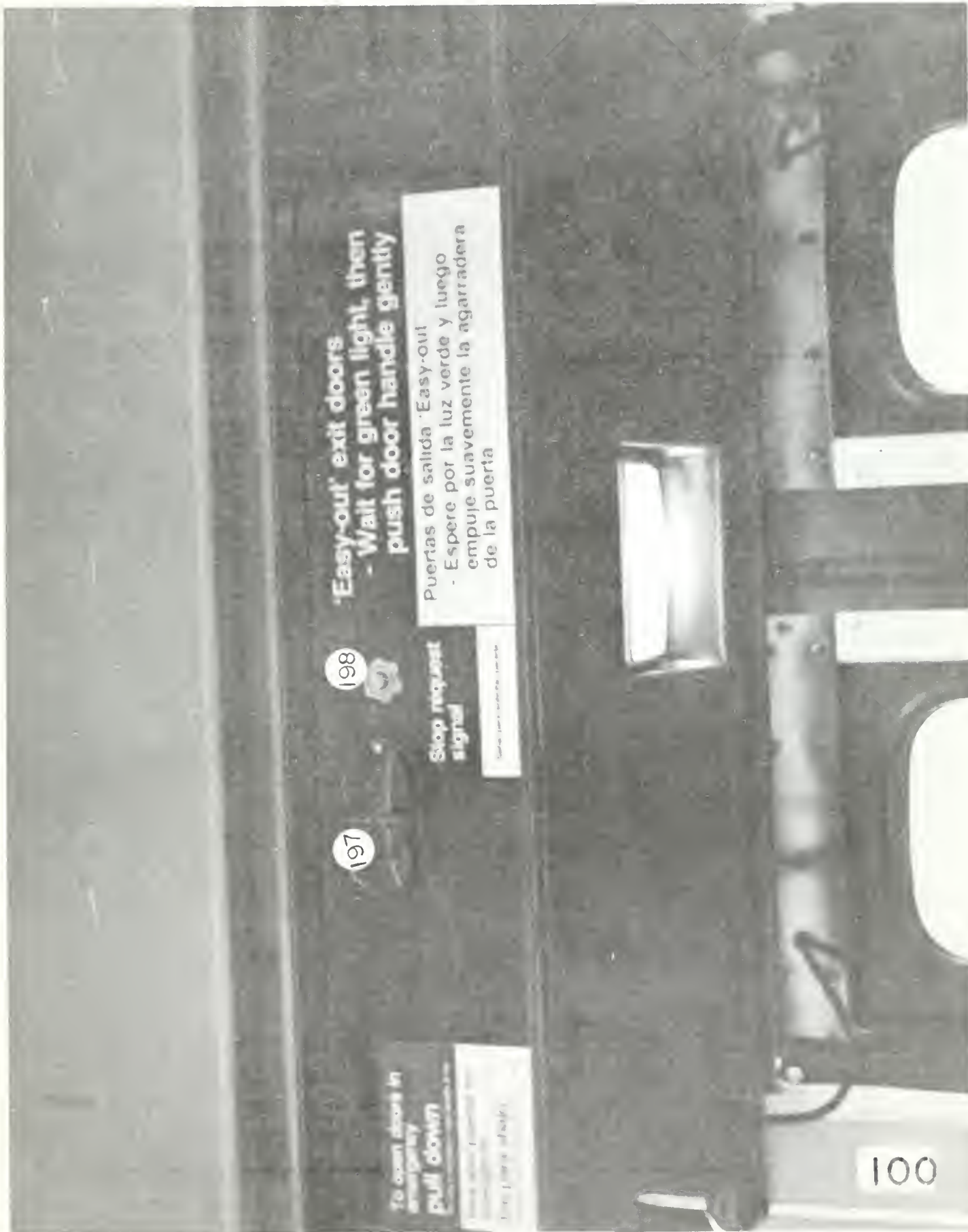
To burst doors in
emergency
pull down

Para abrir puertas en
emergencia
tire para abajo

PLEASE DO NOT
PUT HEAD OR
ARMS OUT OF
WINDOW

Please
do not
put
head
or arms
out of
window

Please
do not
put
head
or arms
out of
window



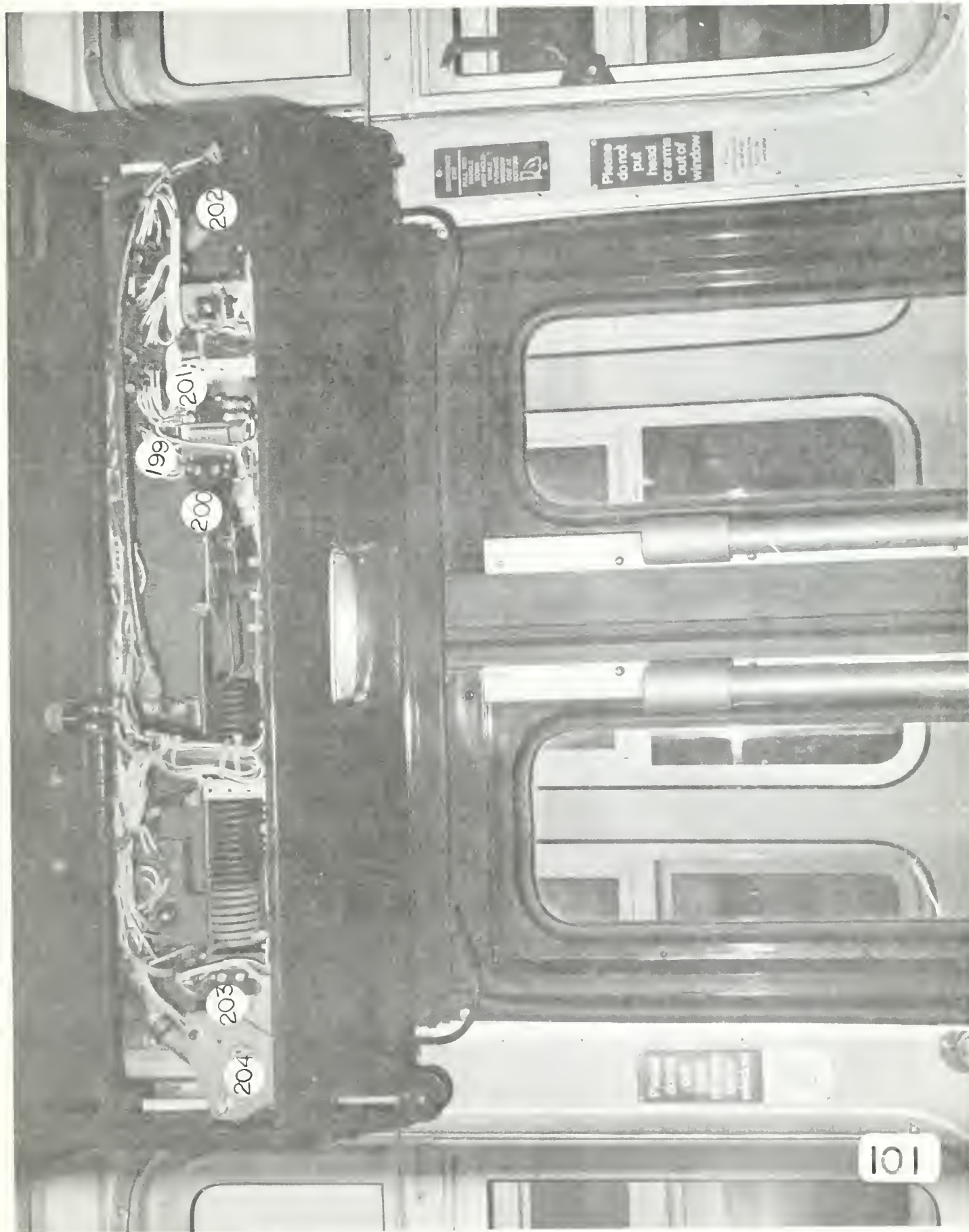
198
"Easy-out" exit doors
- Wait for green light, then
push door handle gently

Puertas de salida "Easy-out"
- Espere por la luz verde y luego
empuje suavemente la agarradera
de la puerta

197
Stop request
signal

To open doors in
emergency
pull down

100

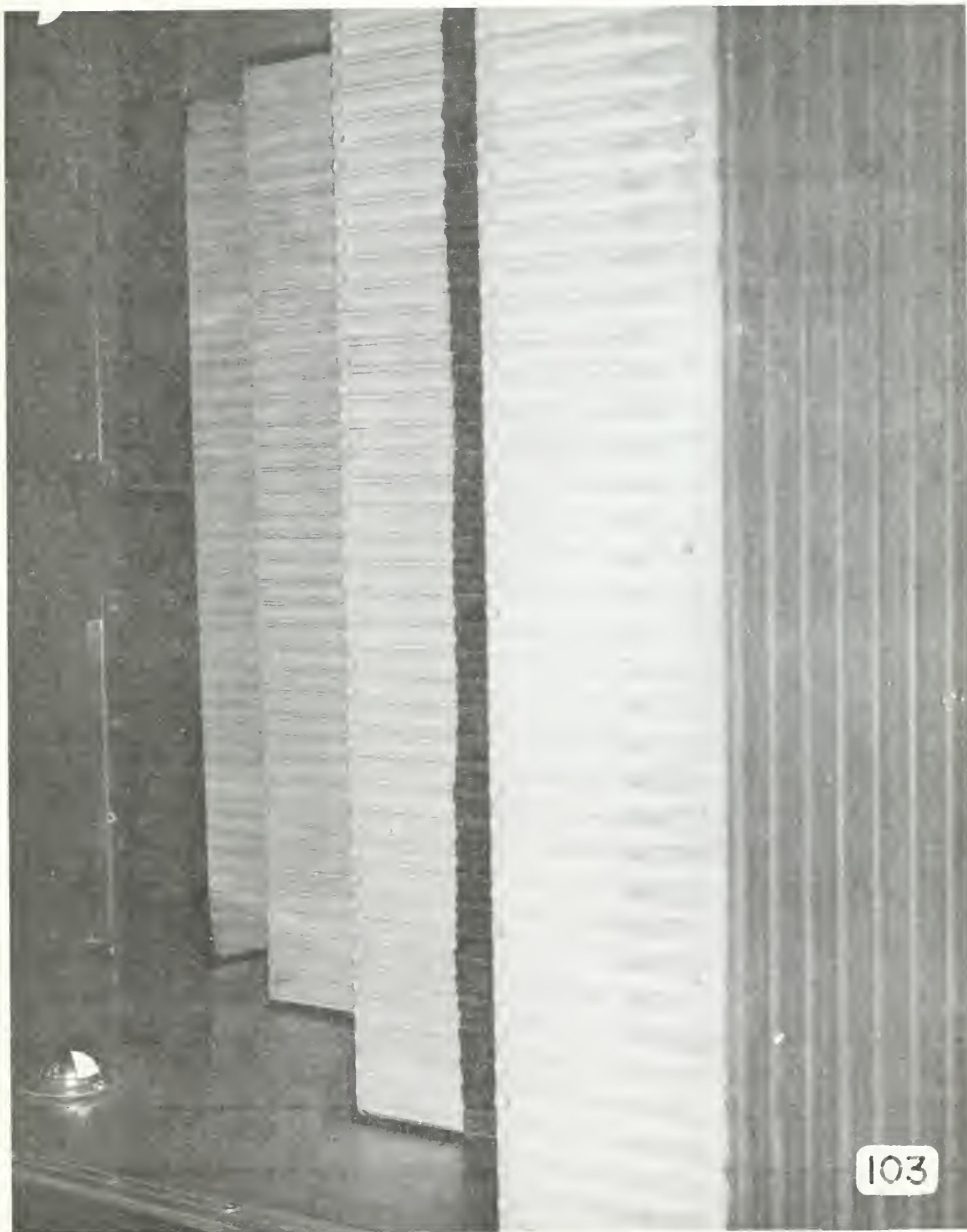


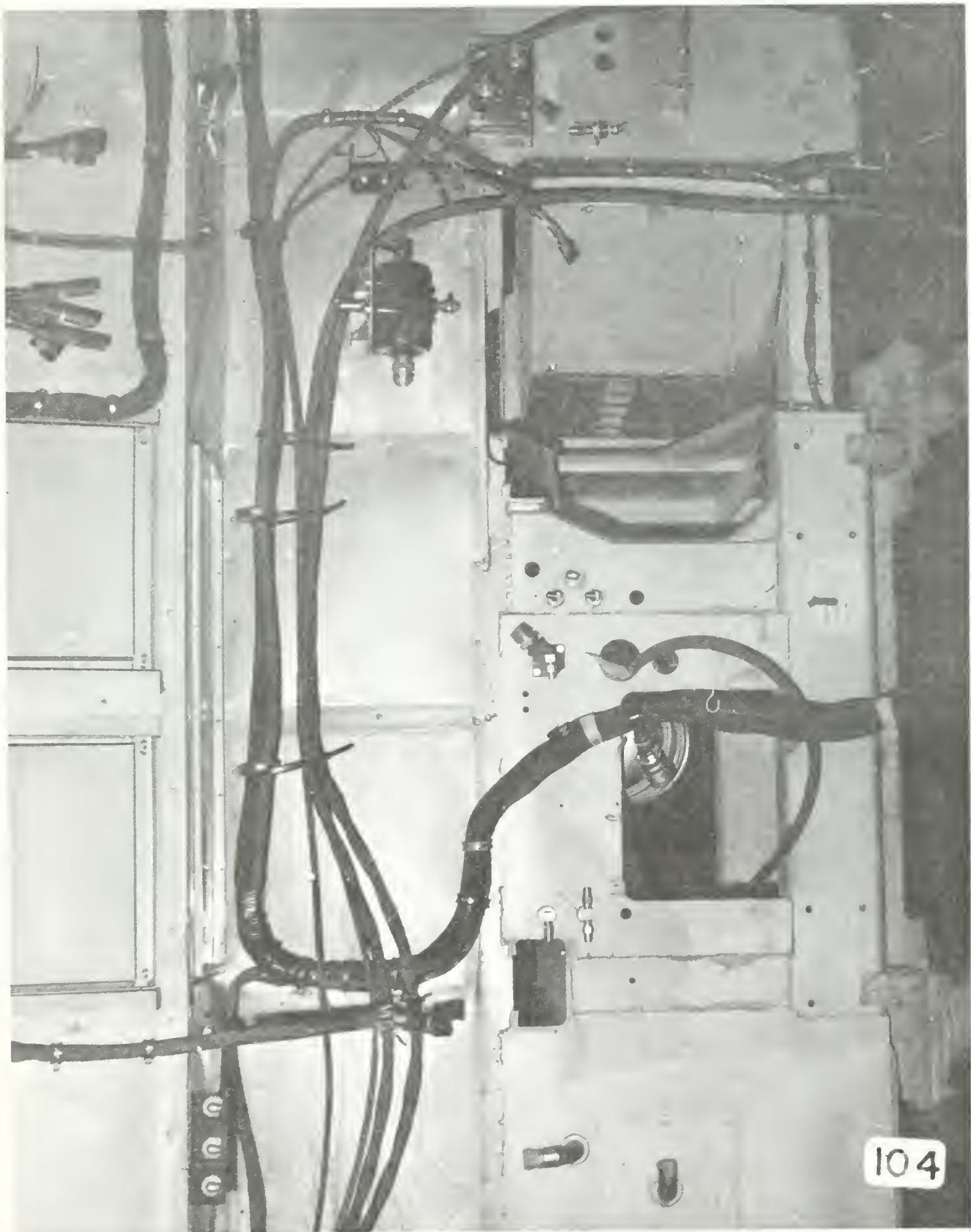


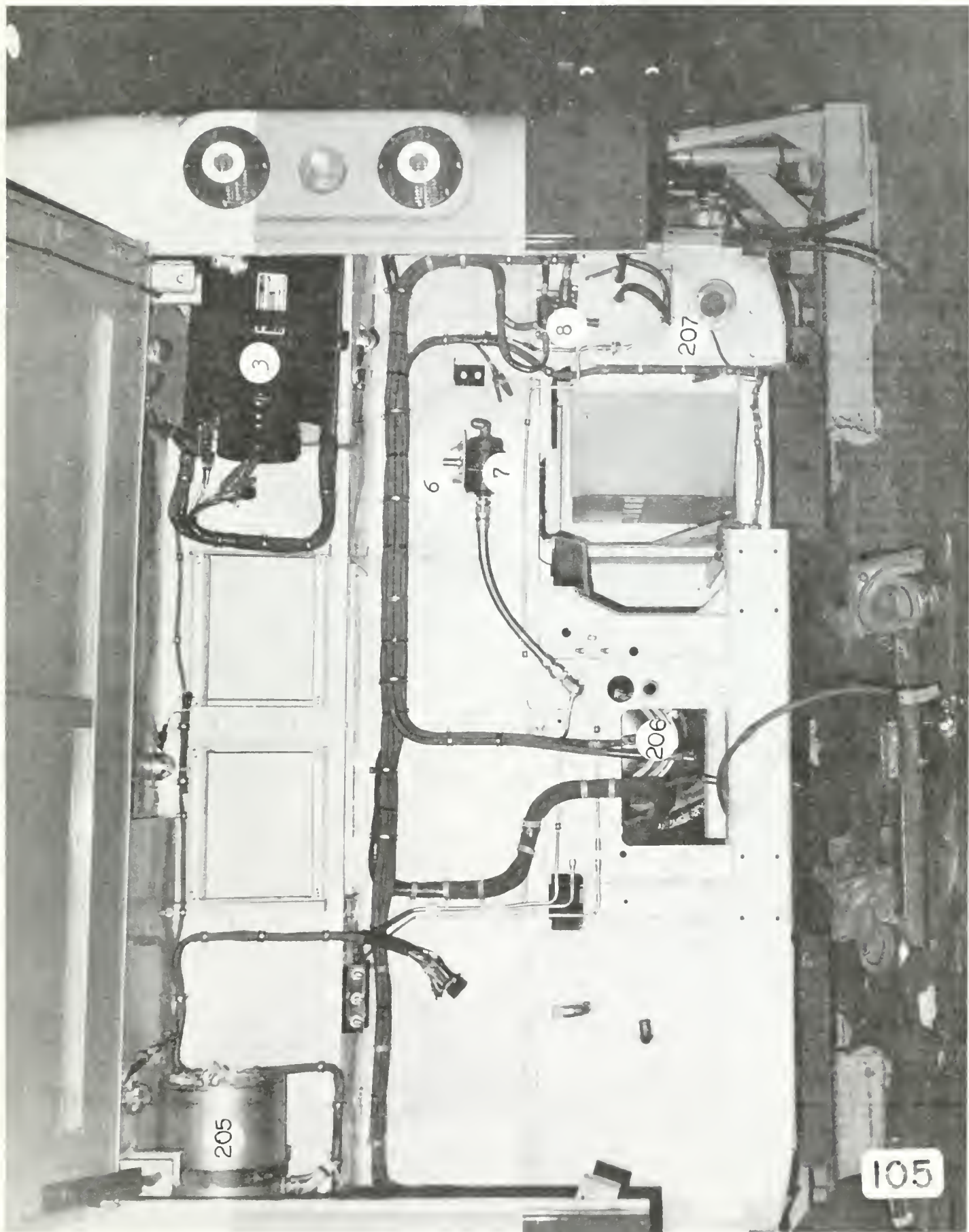
Please do not put head or arms out of window

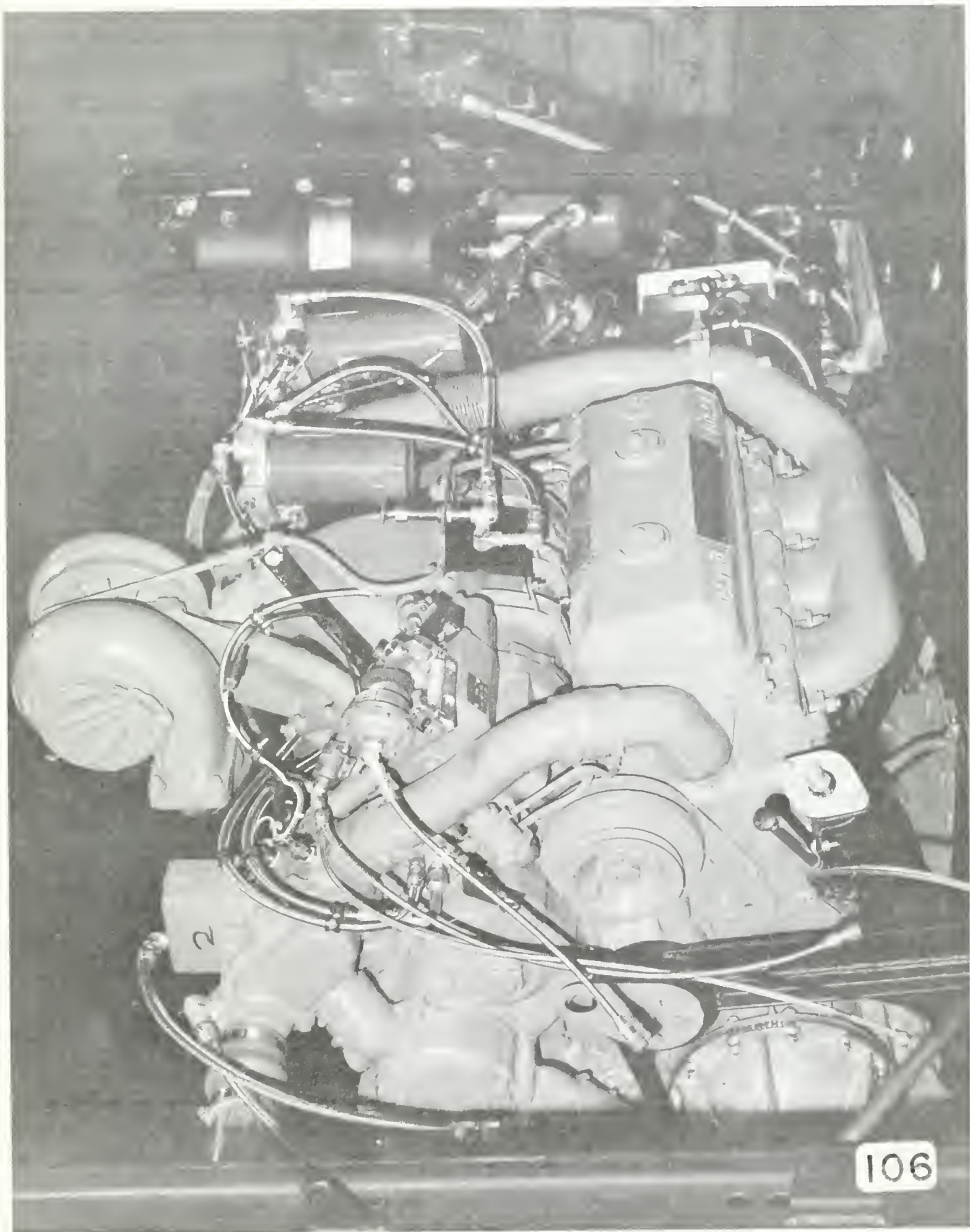
Please do not put head or arms out of window

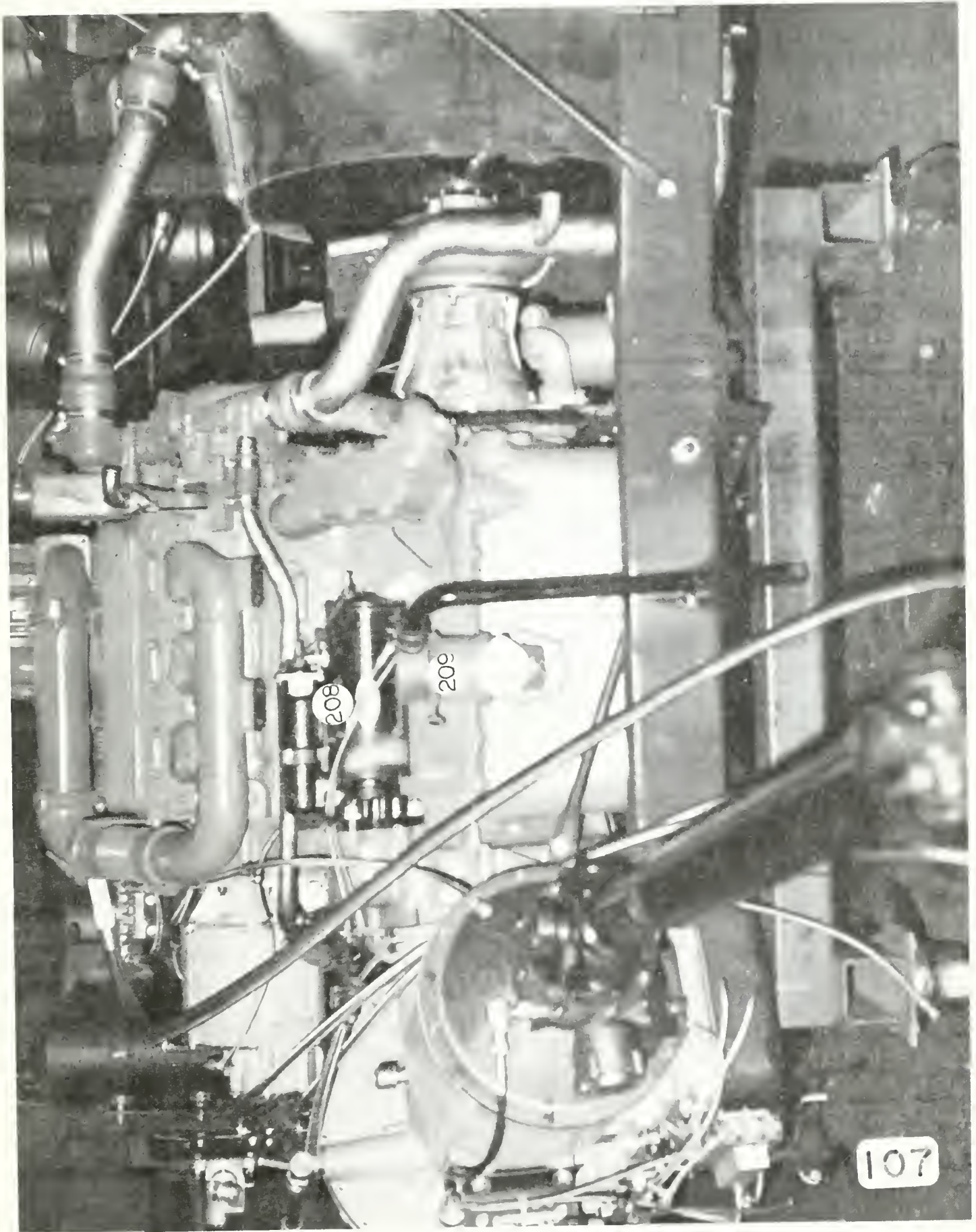
102





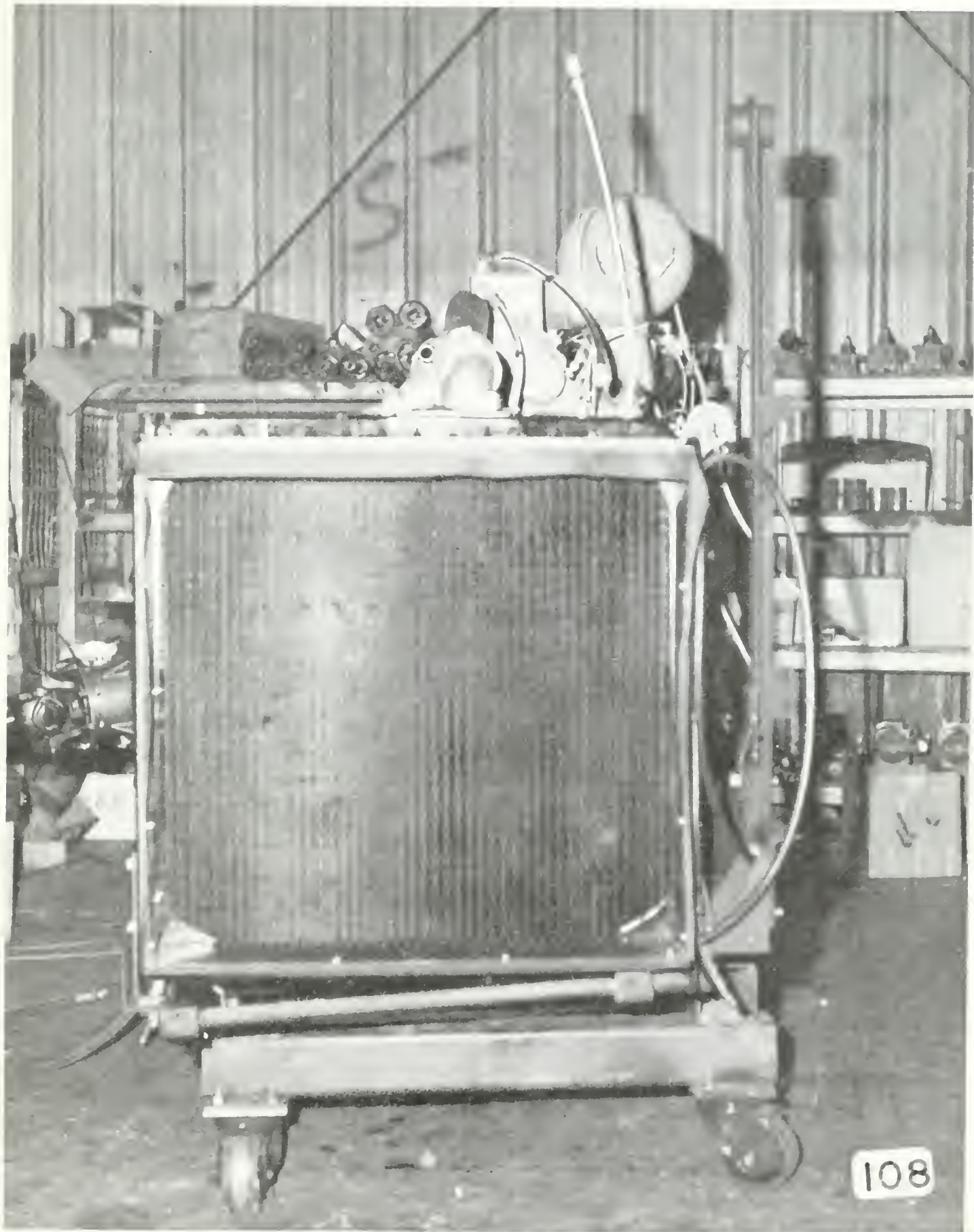


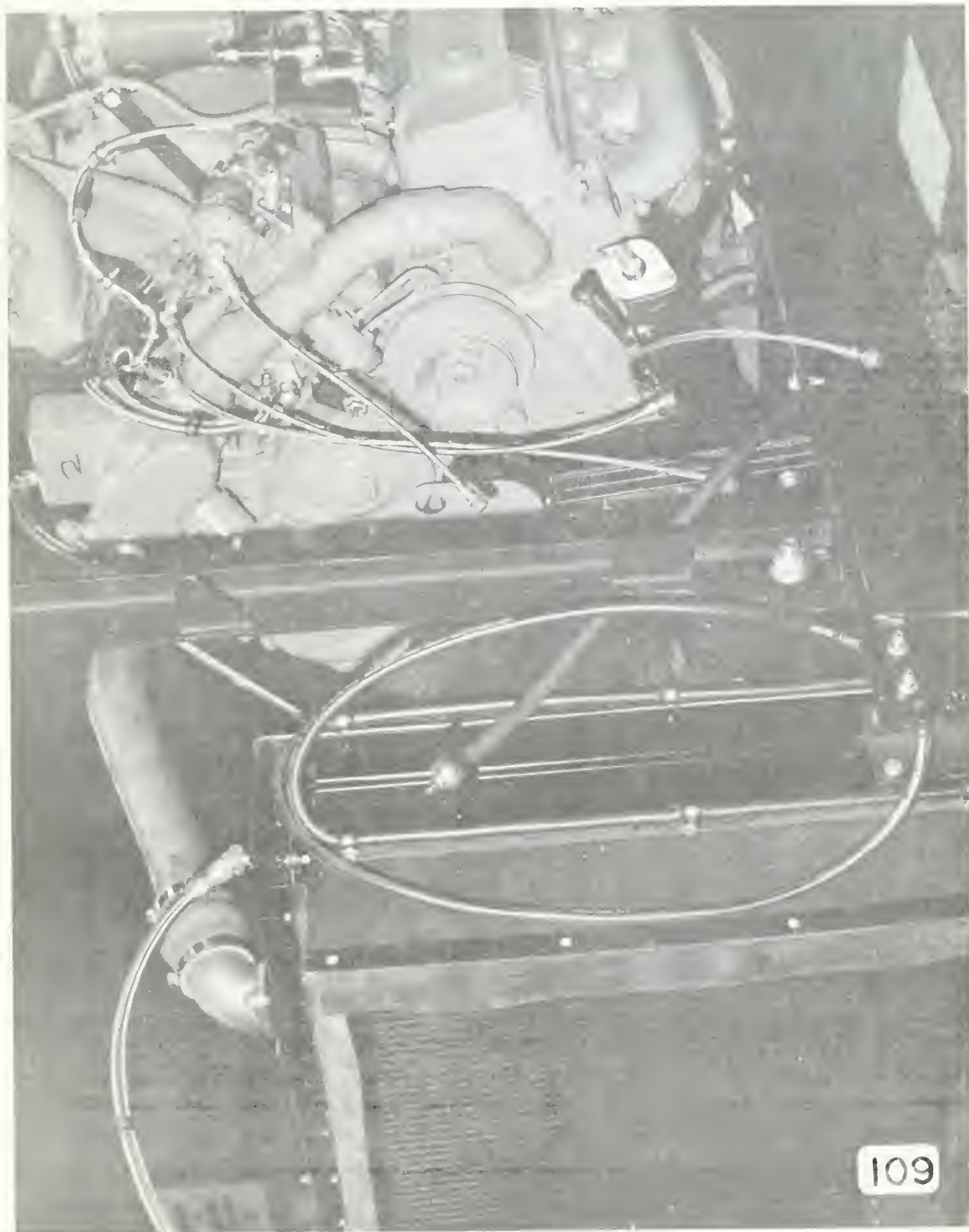


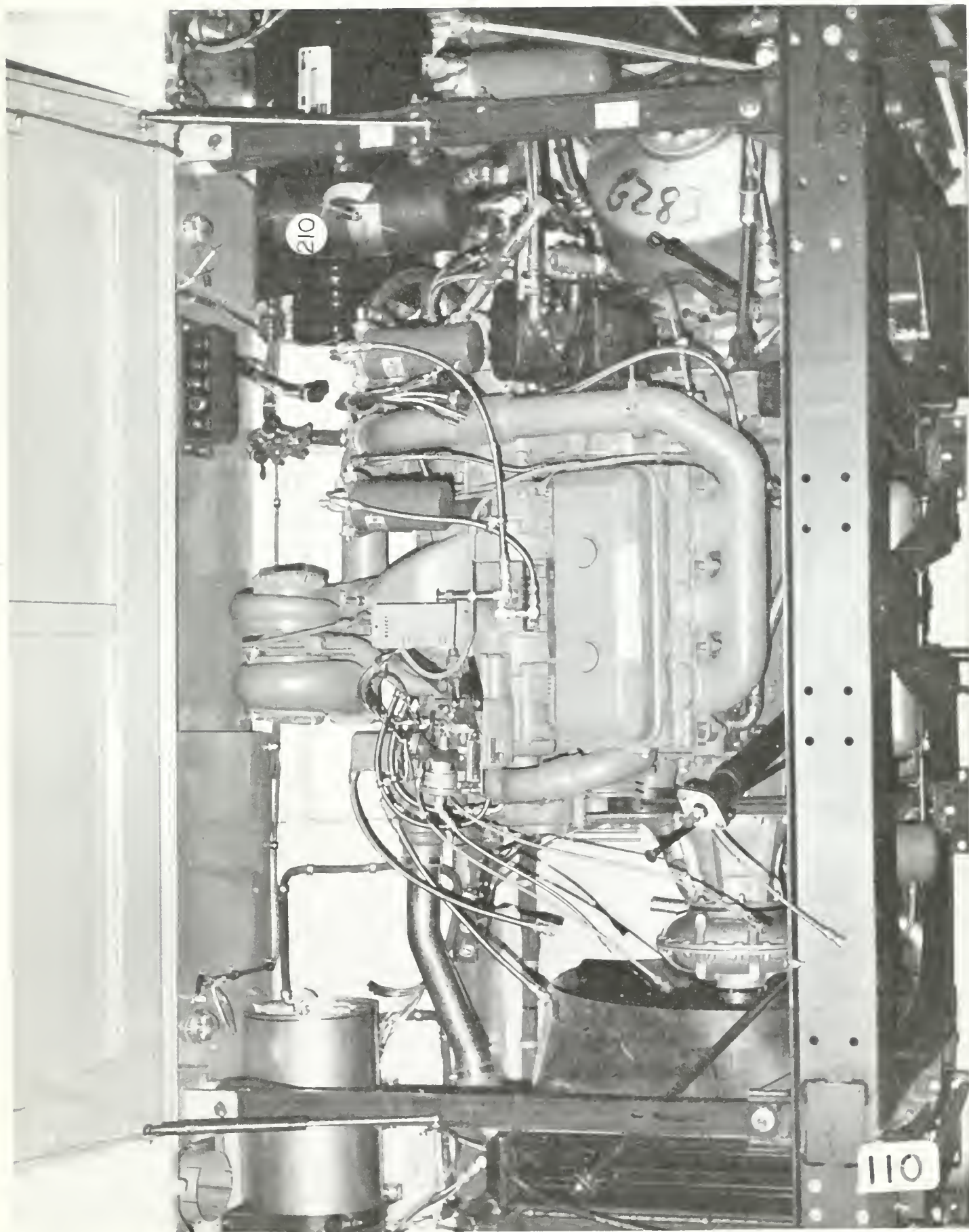


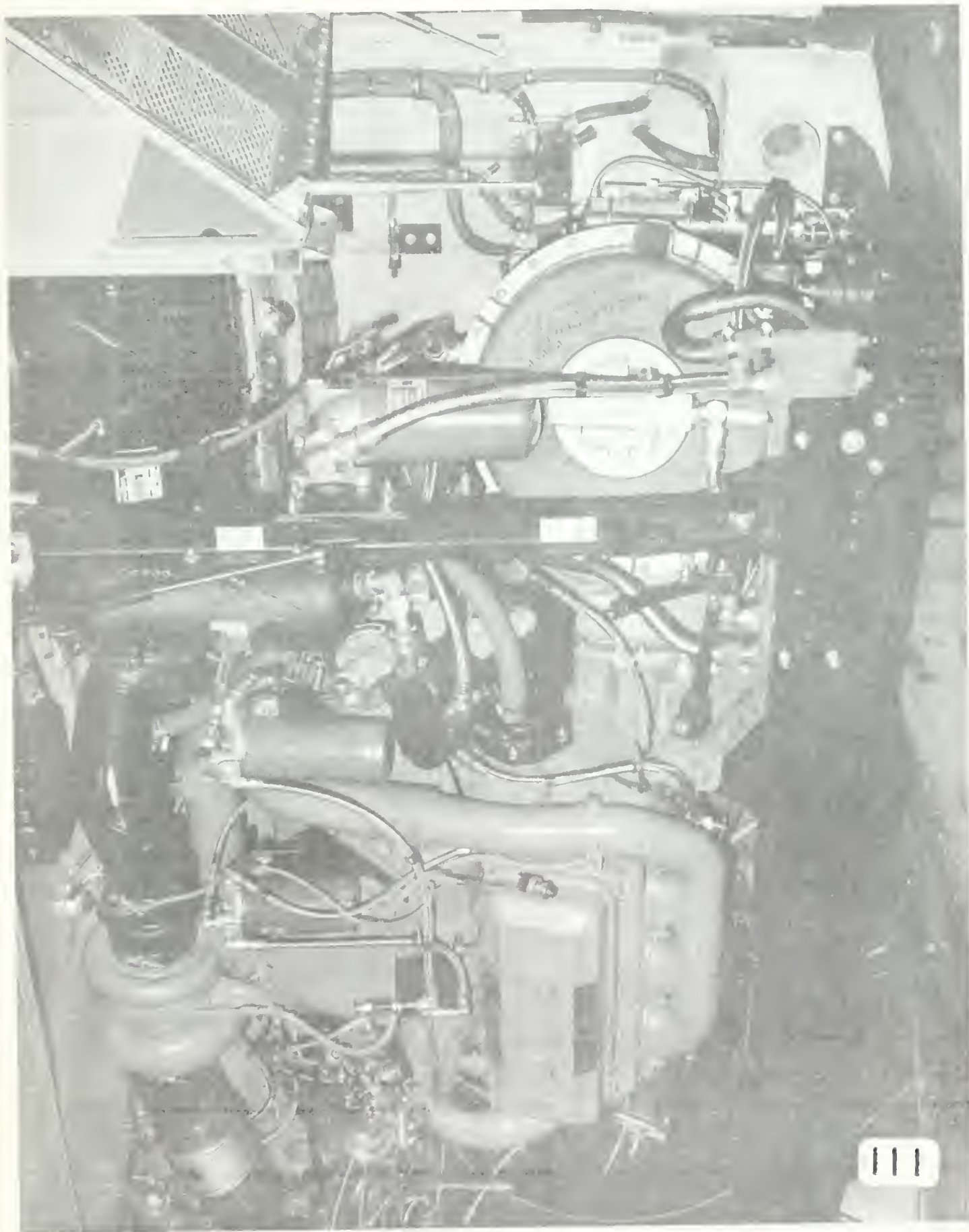
208

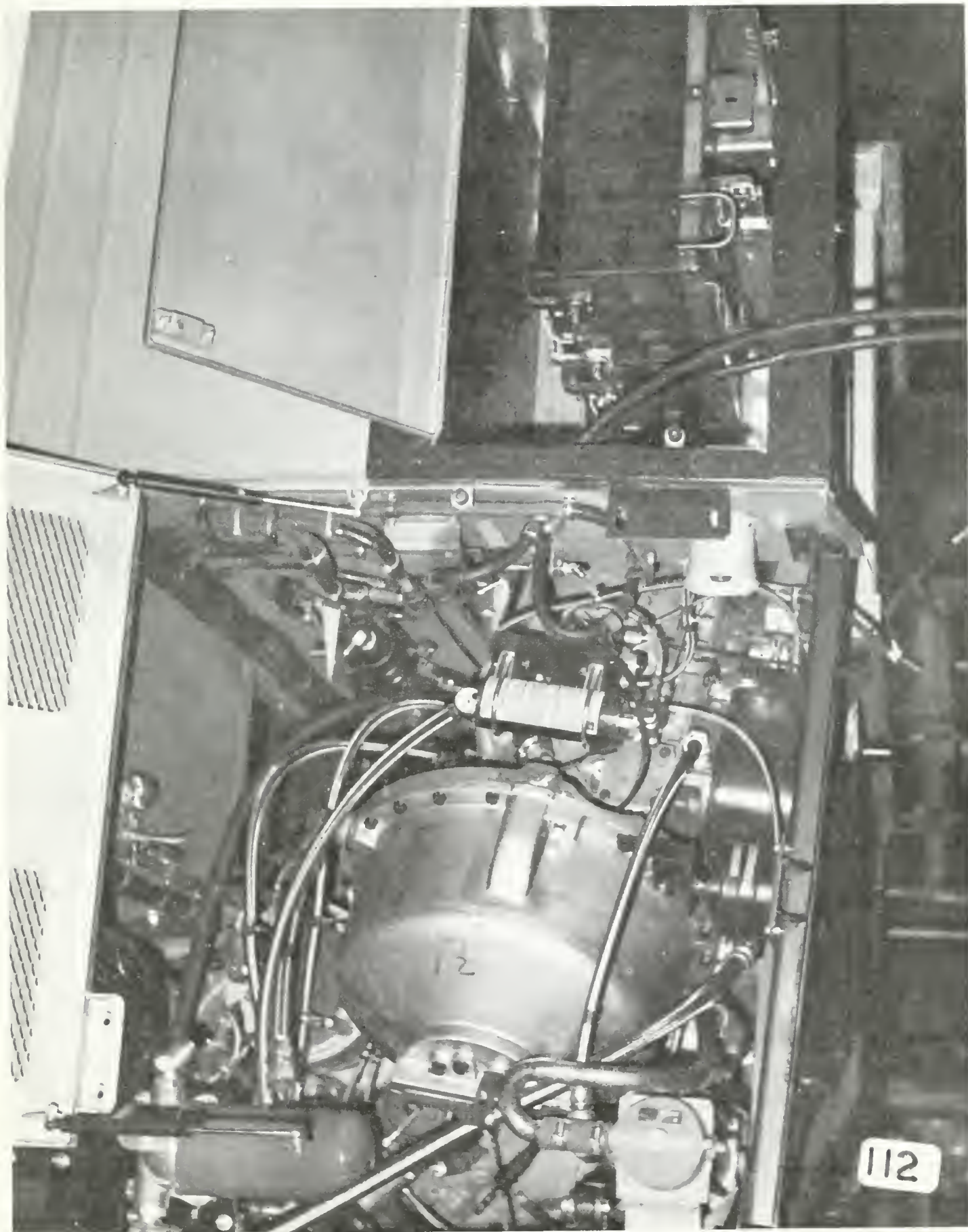
209

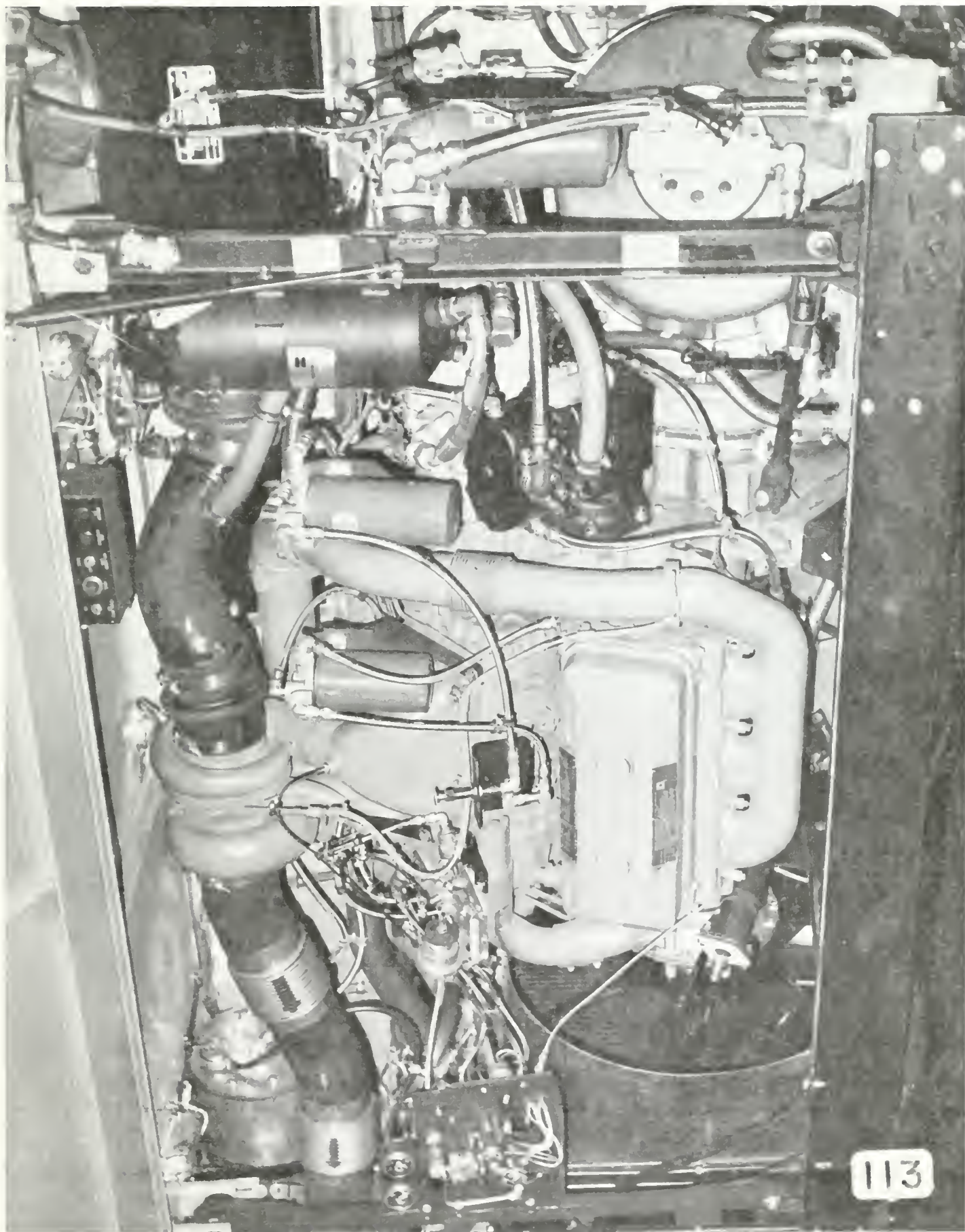


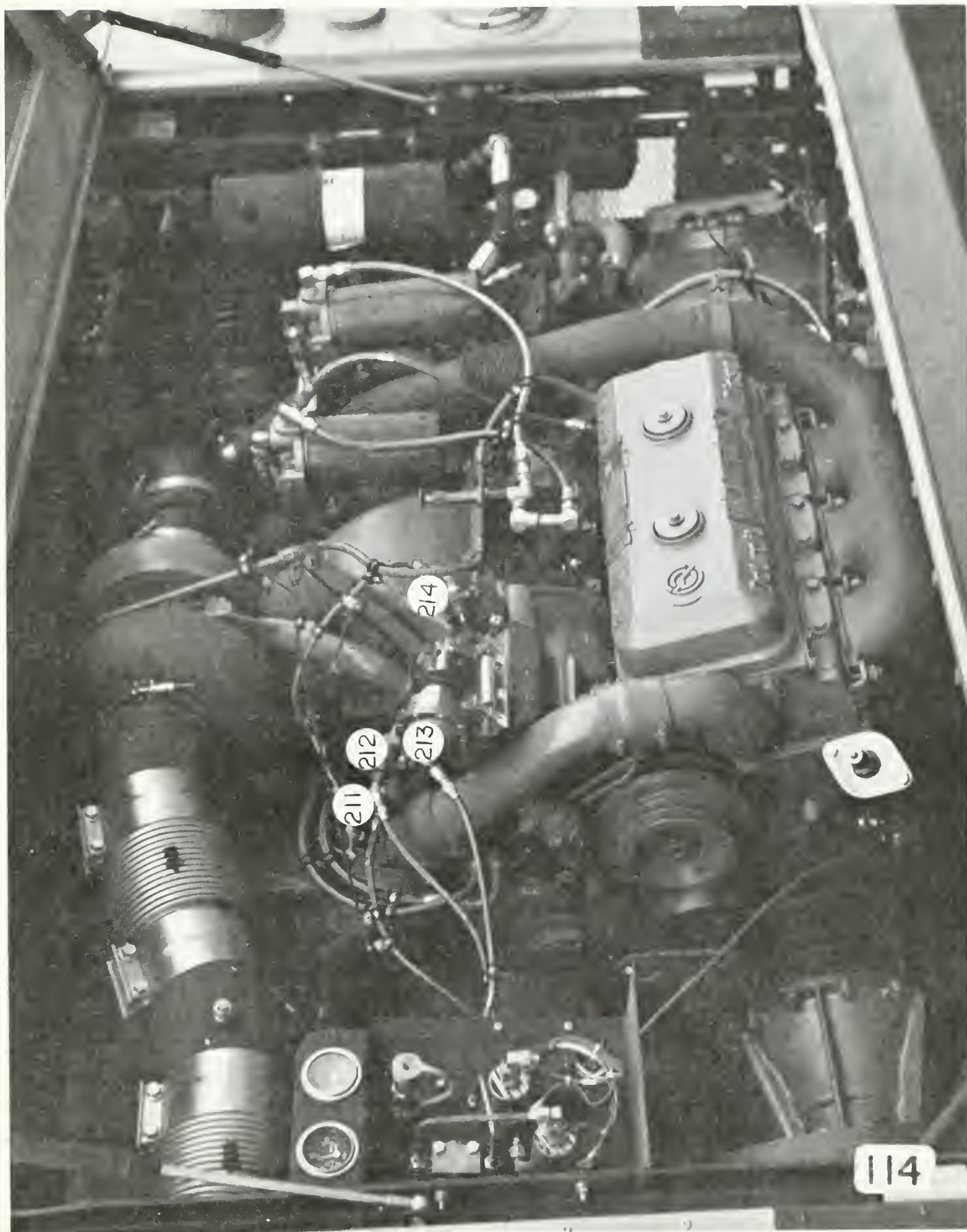


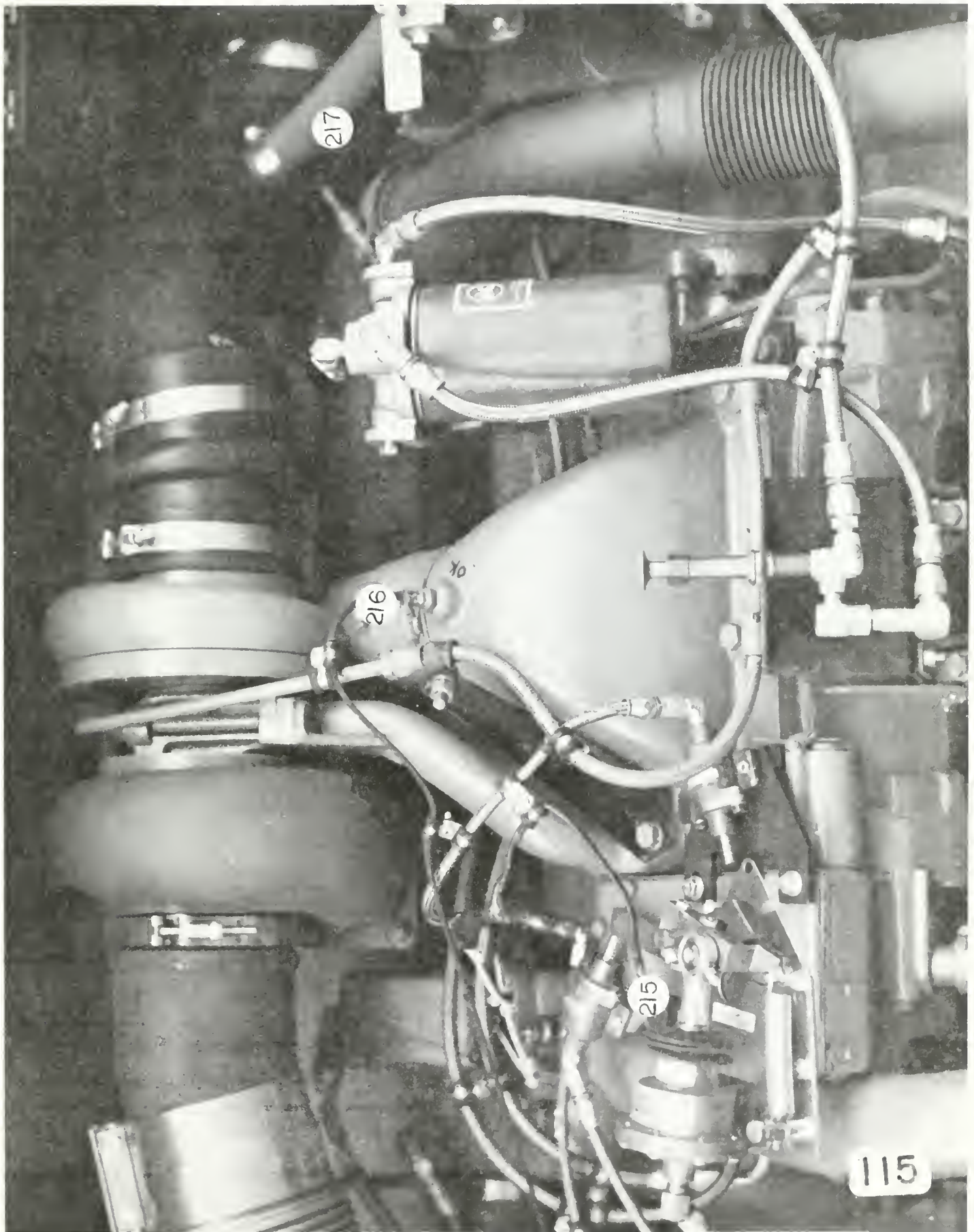


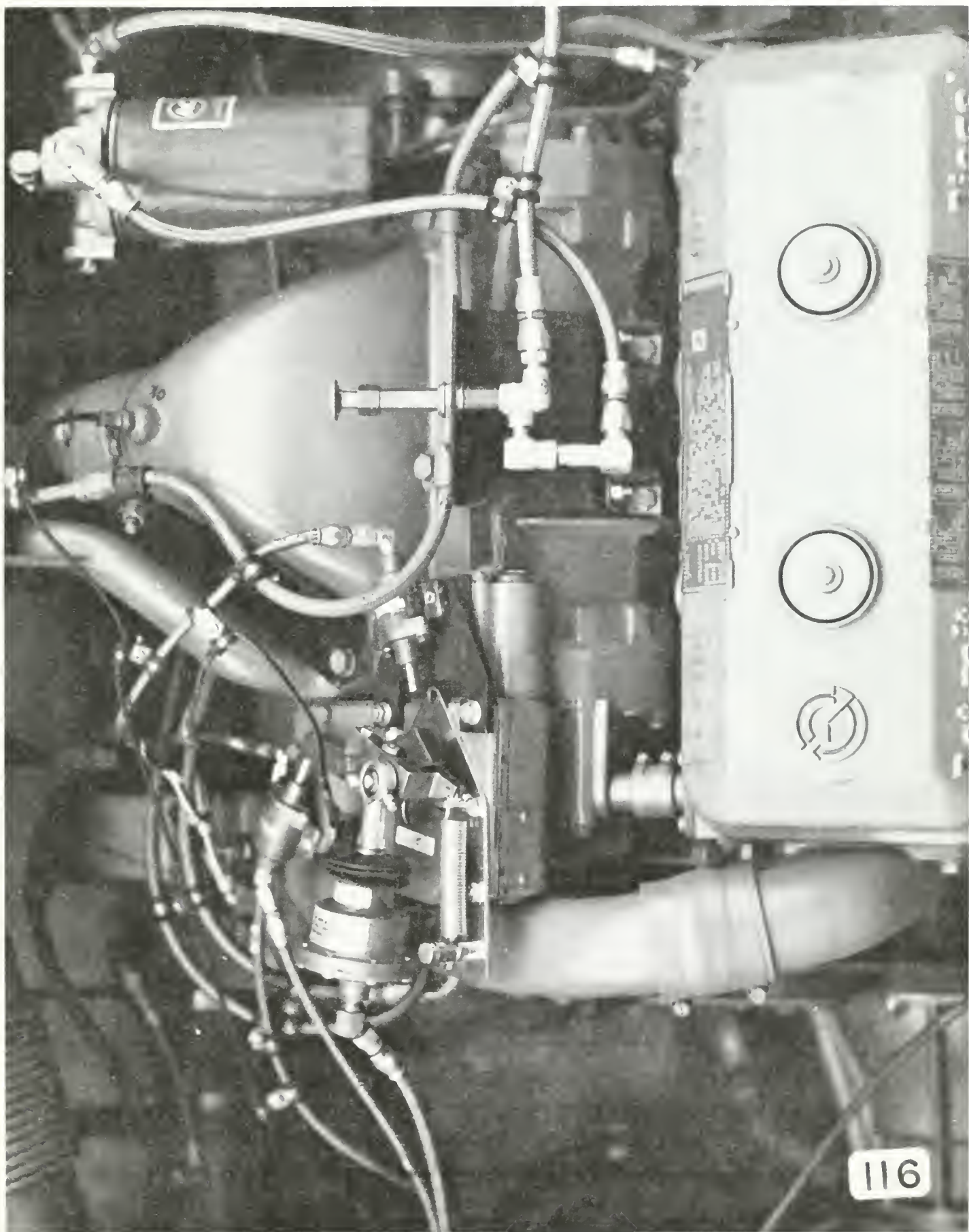


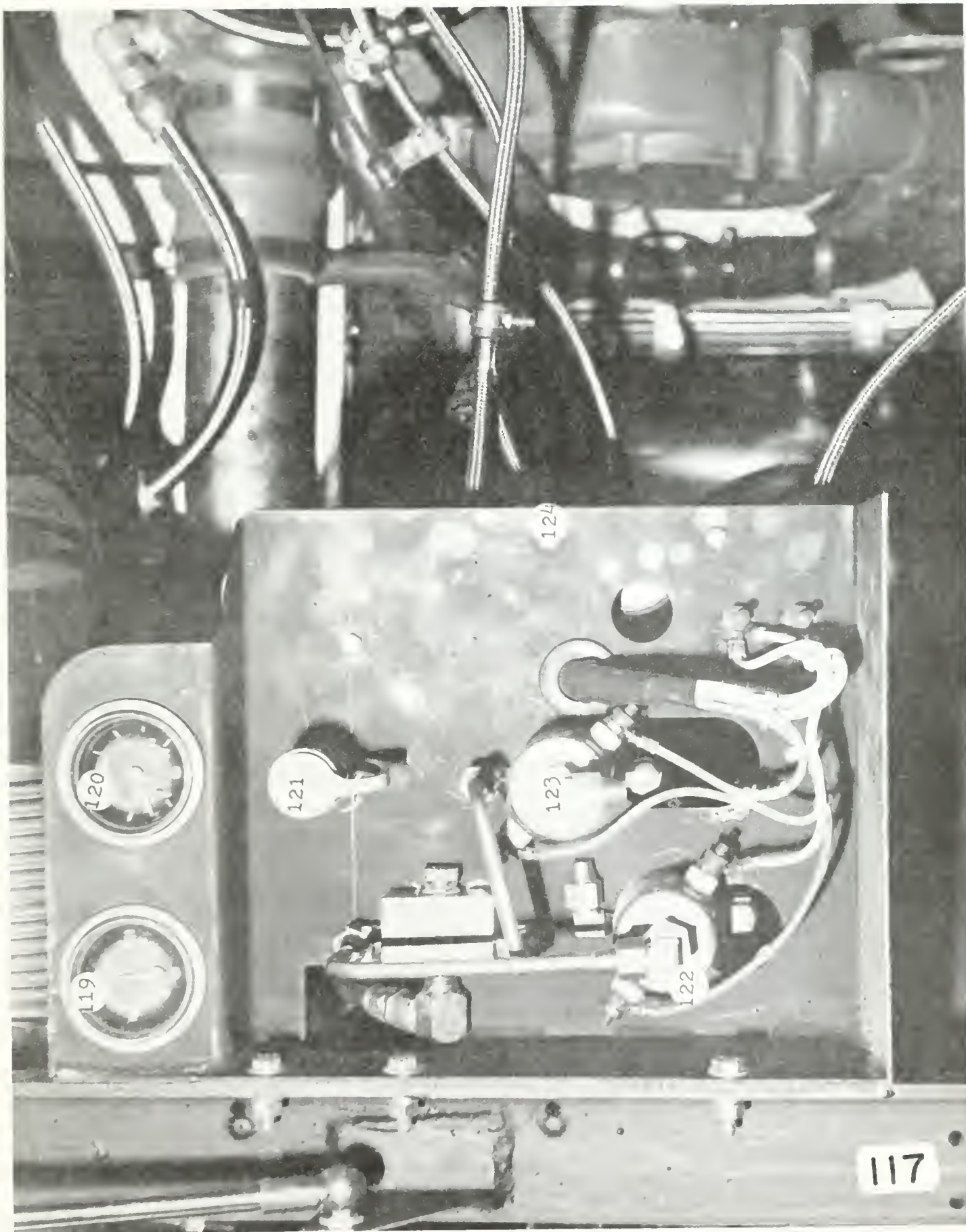


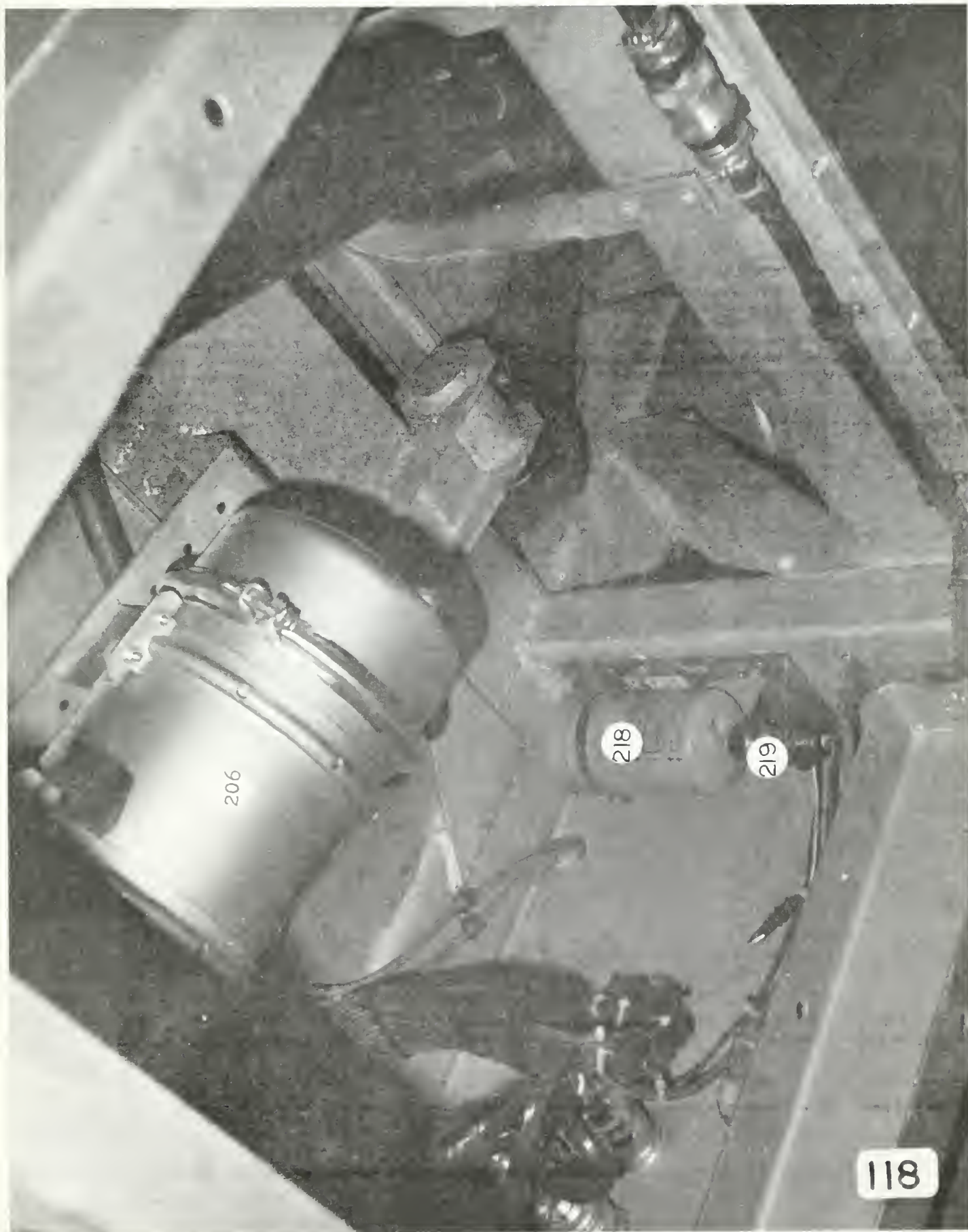


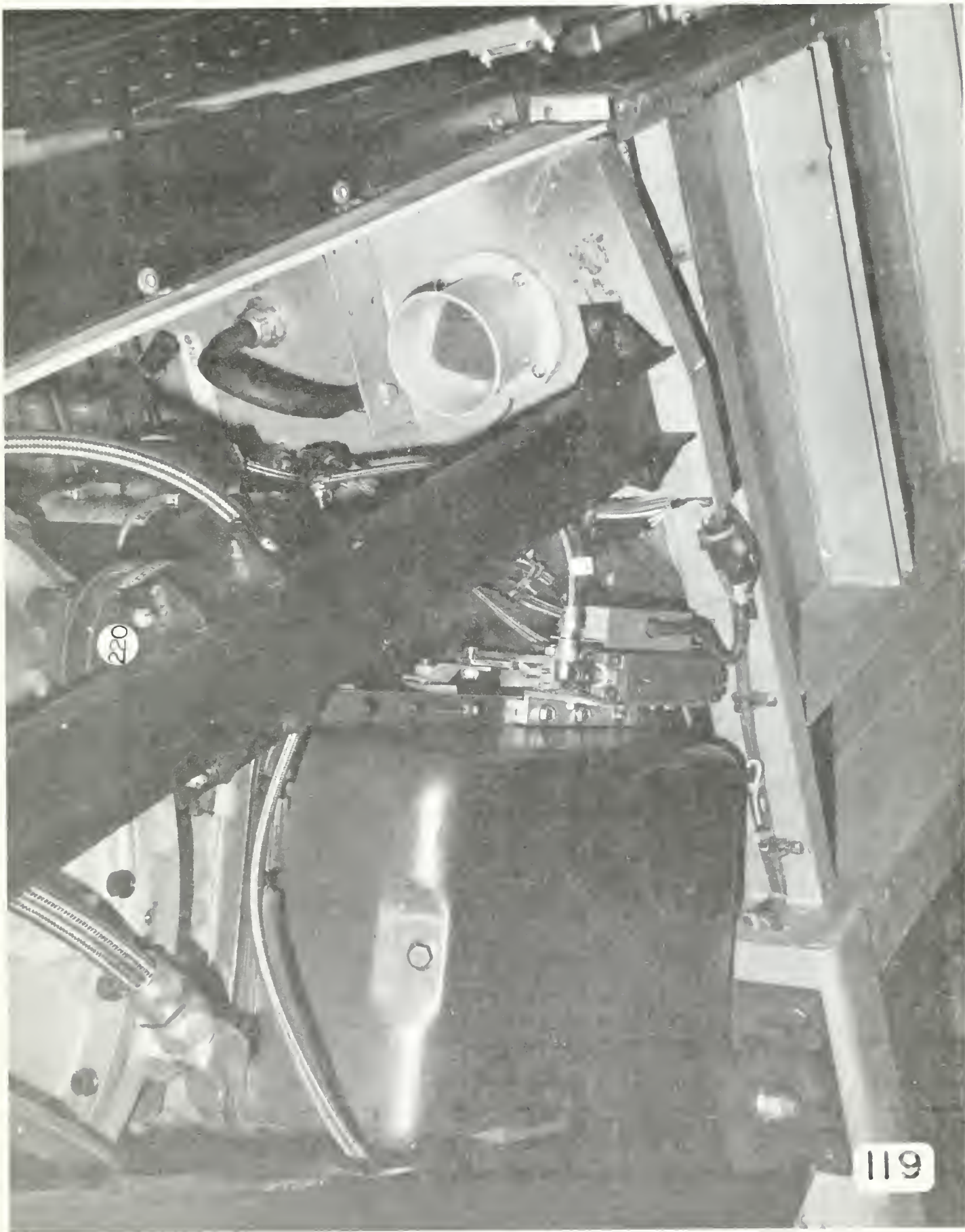




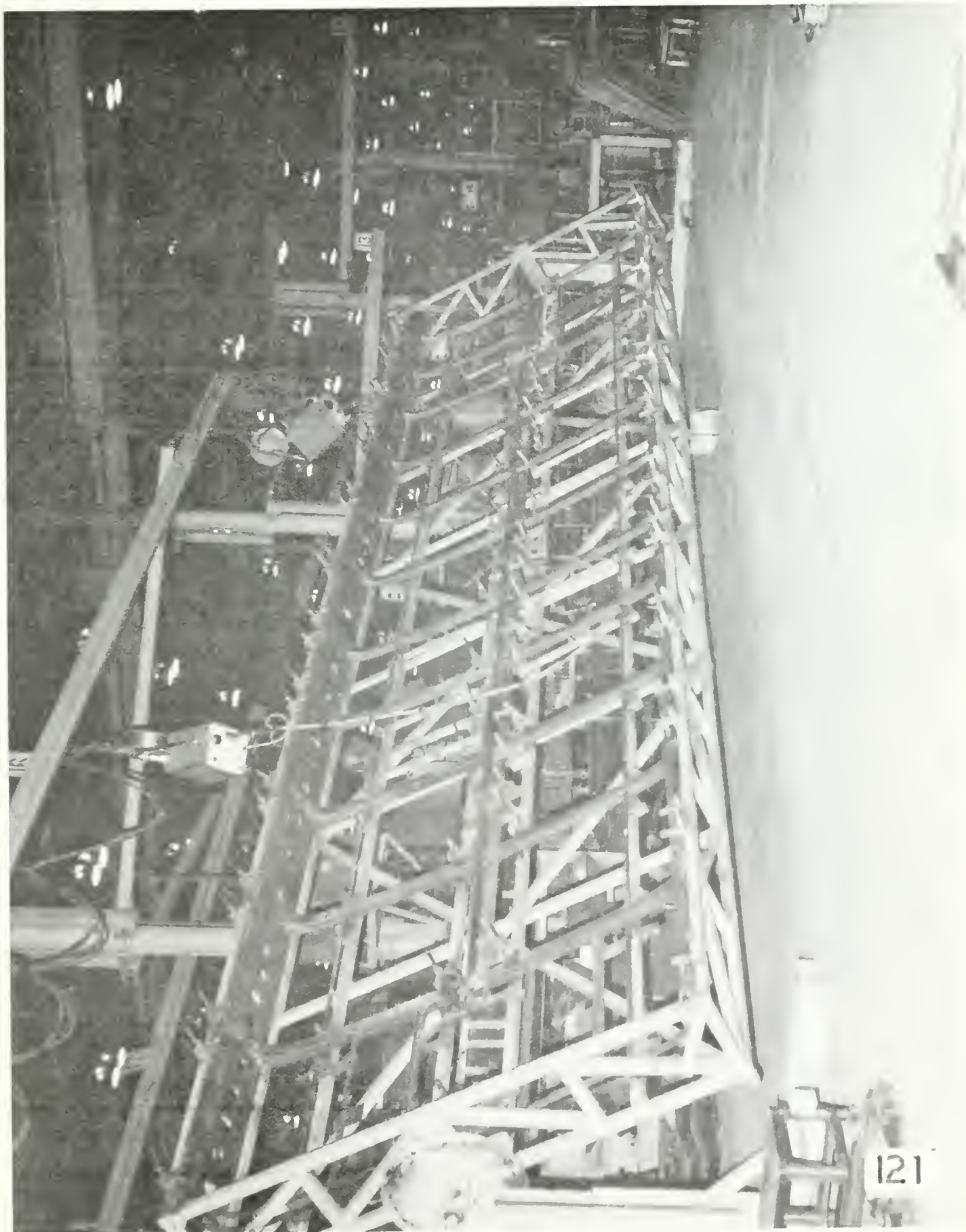




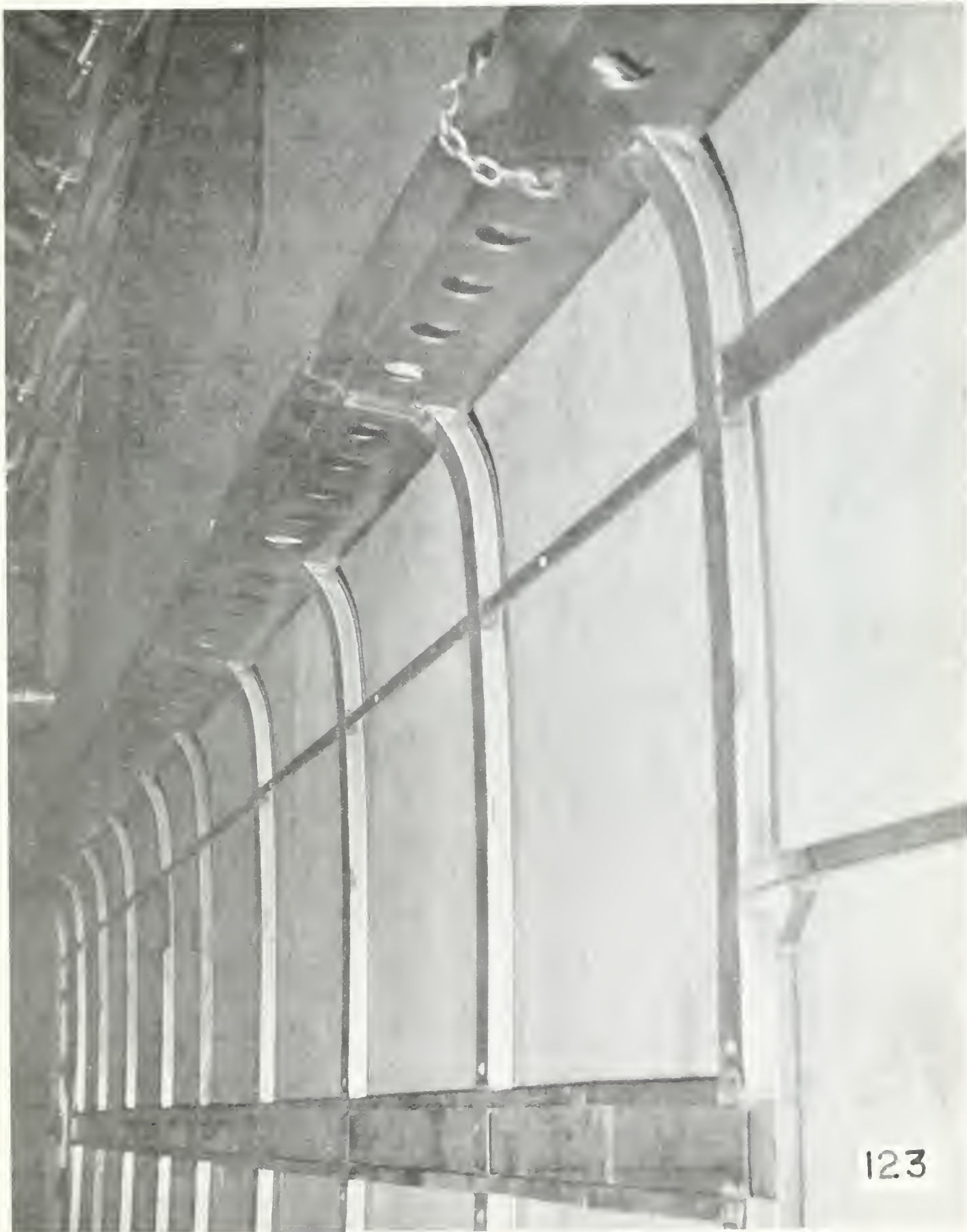


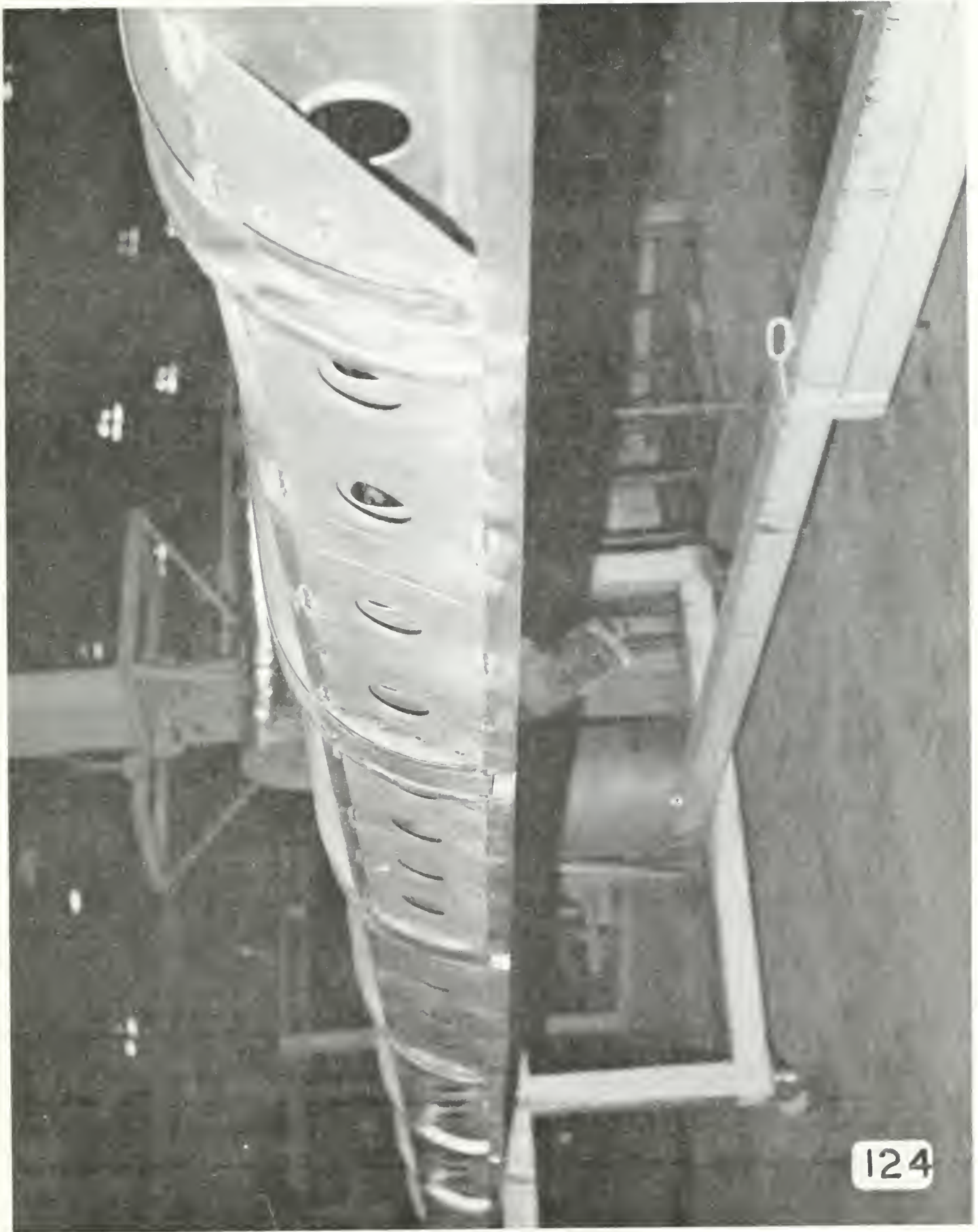


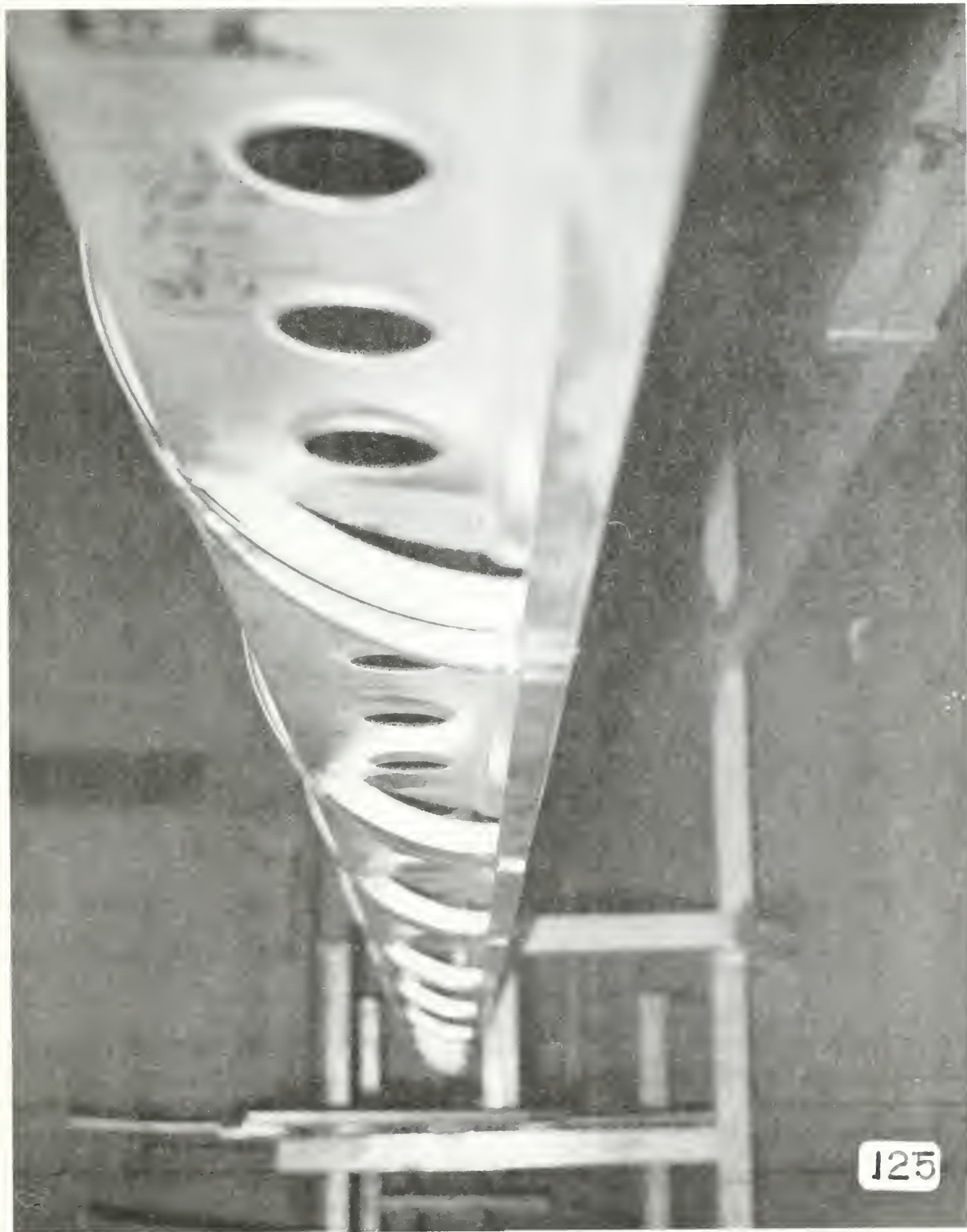








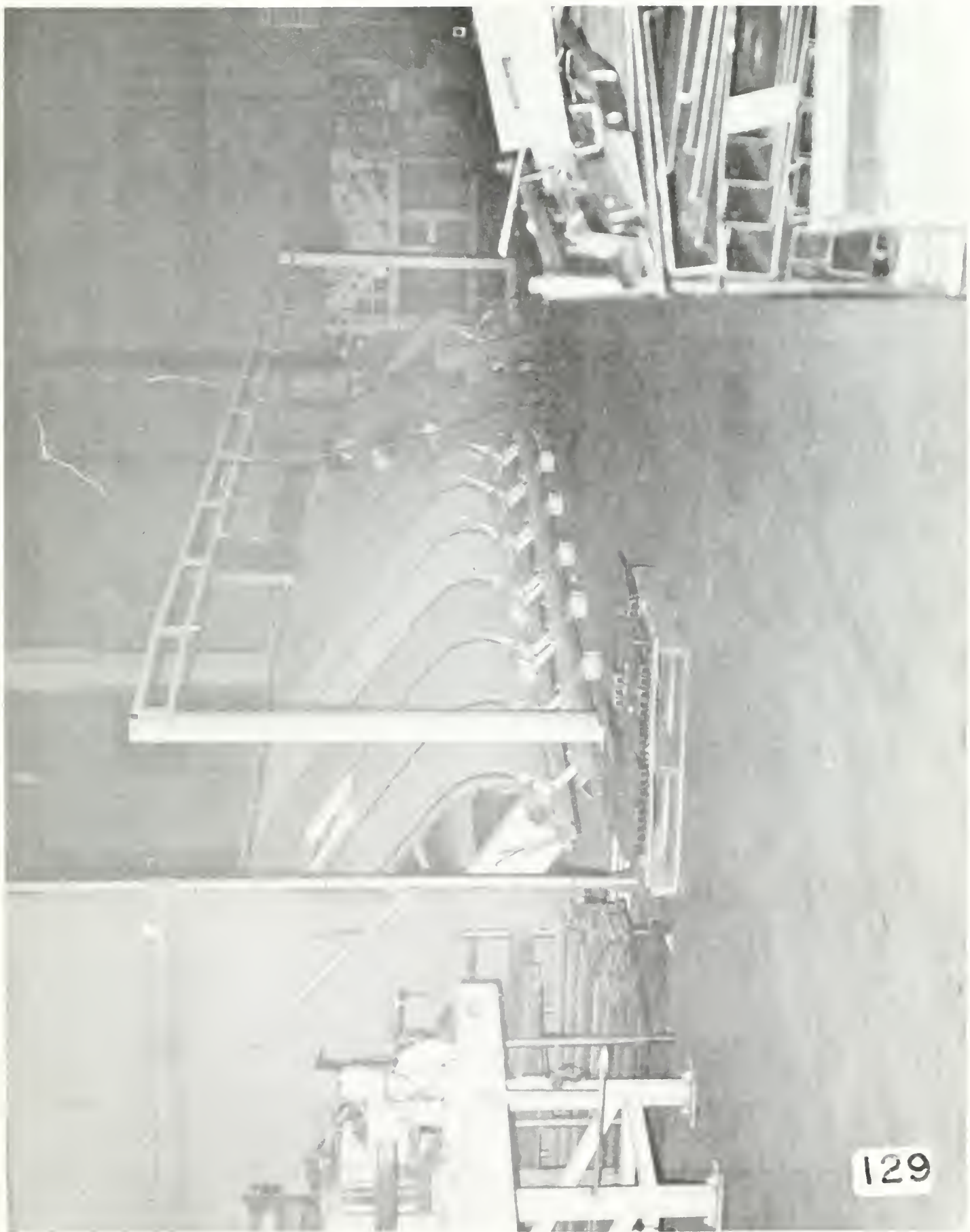


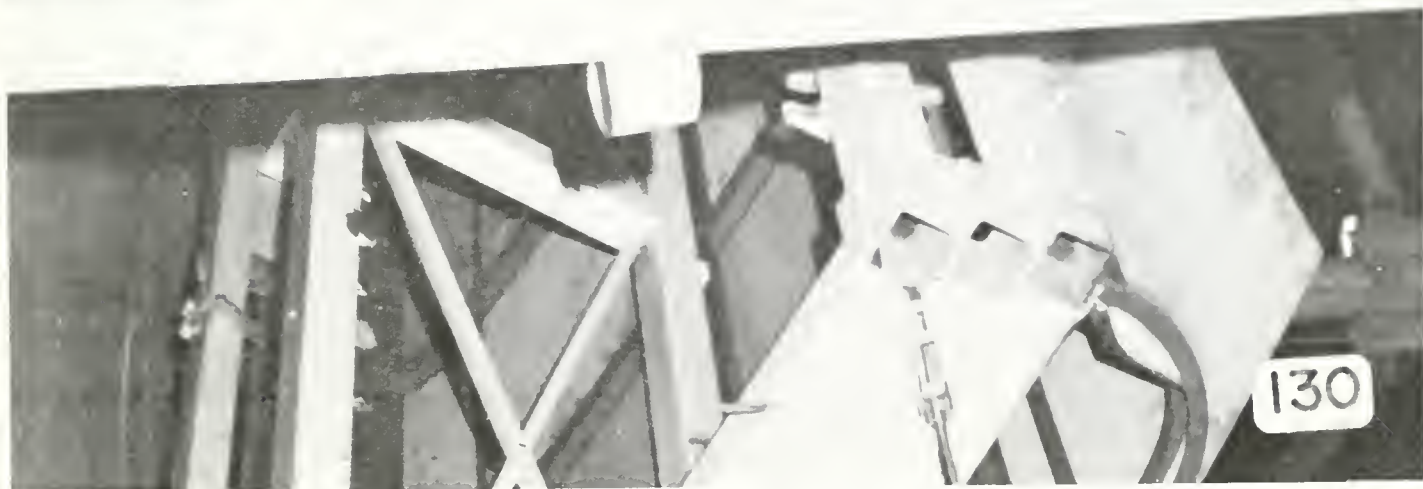




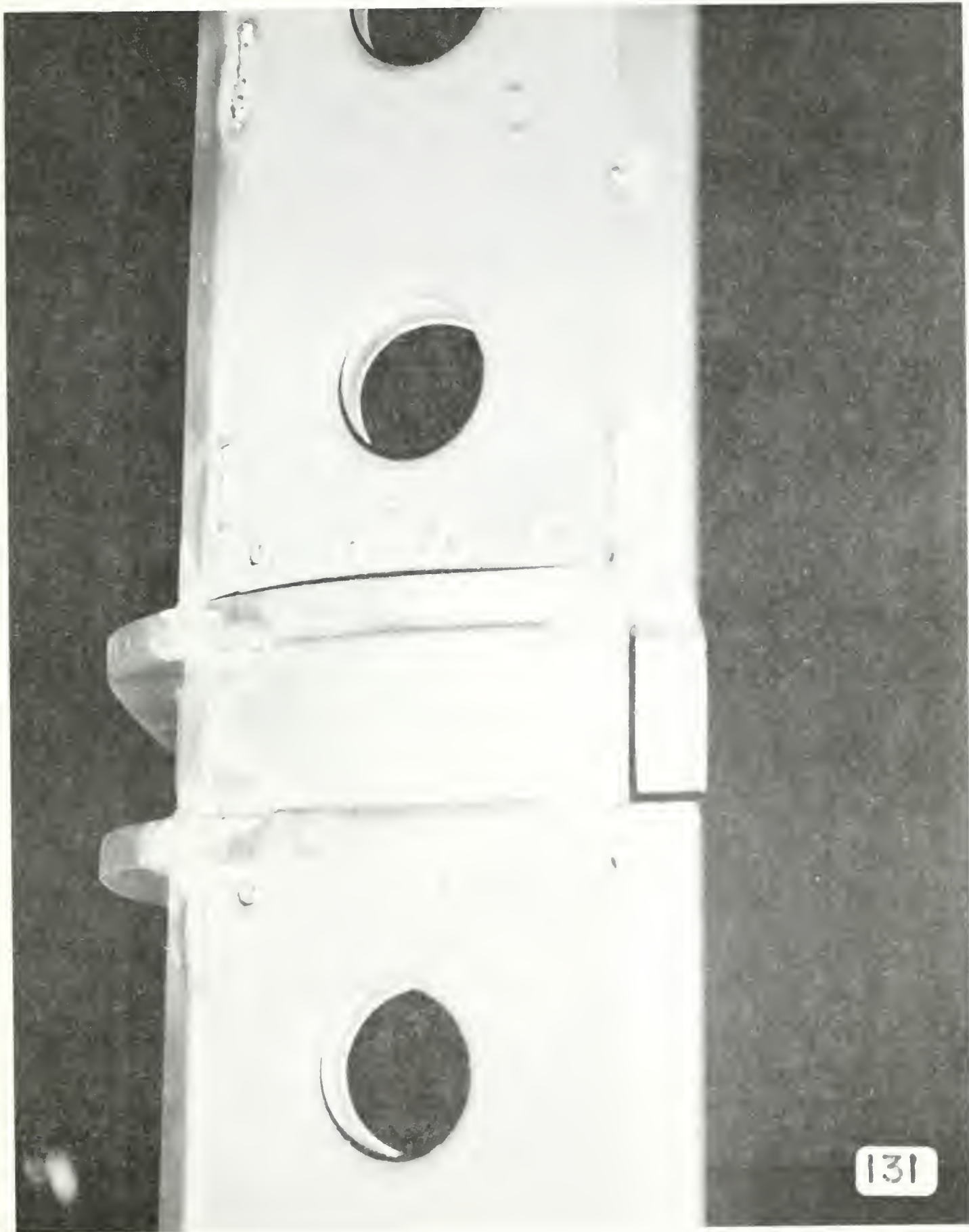


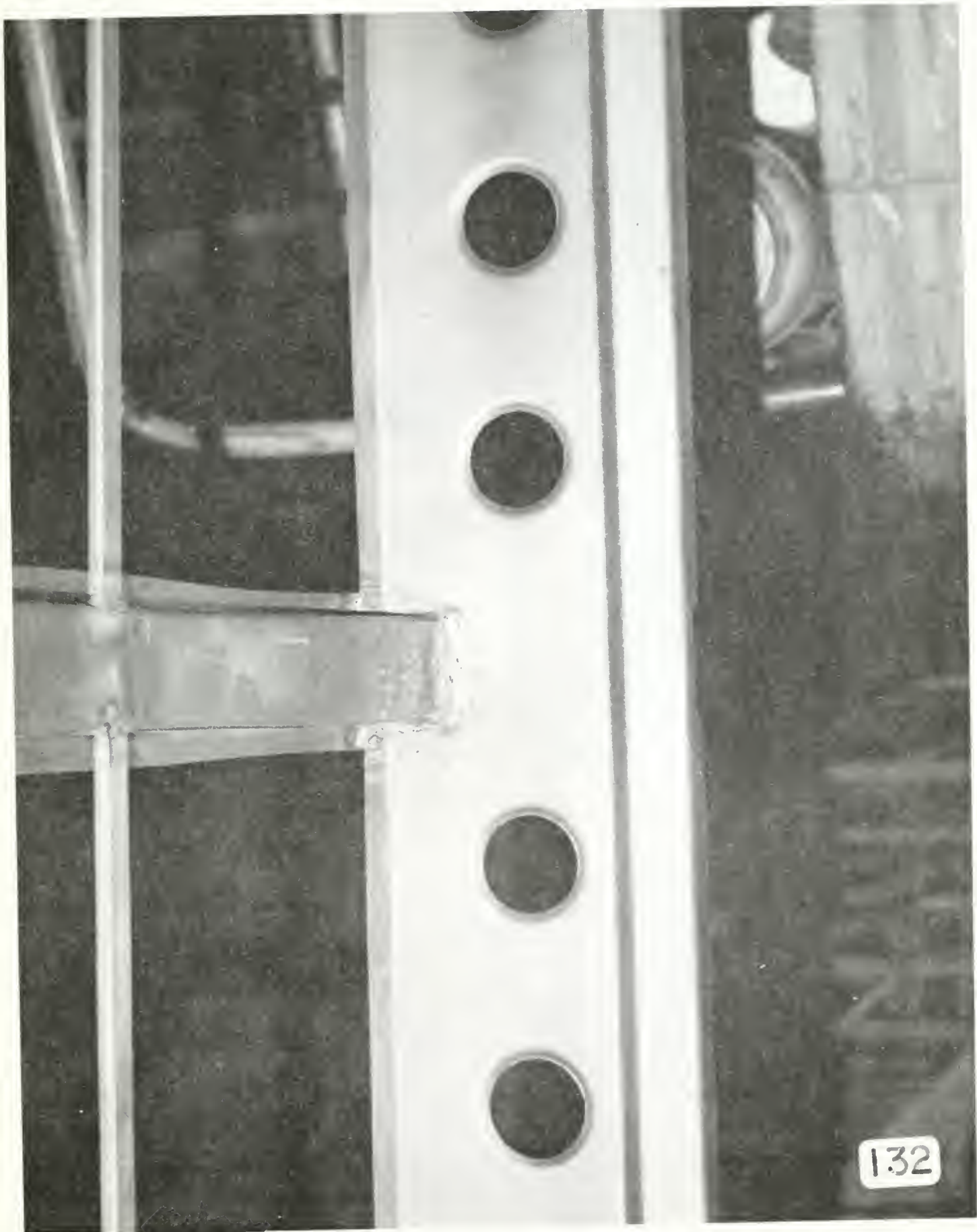






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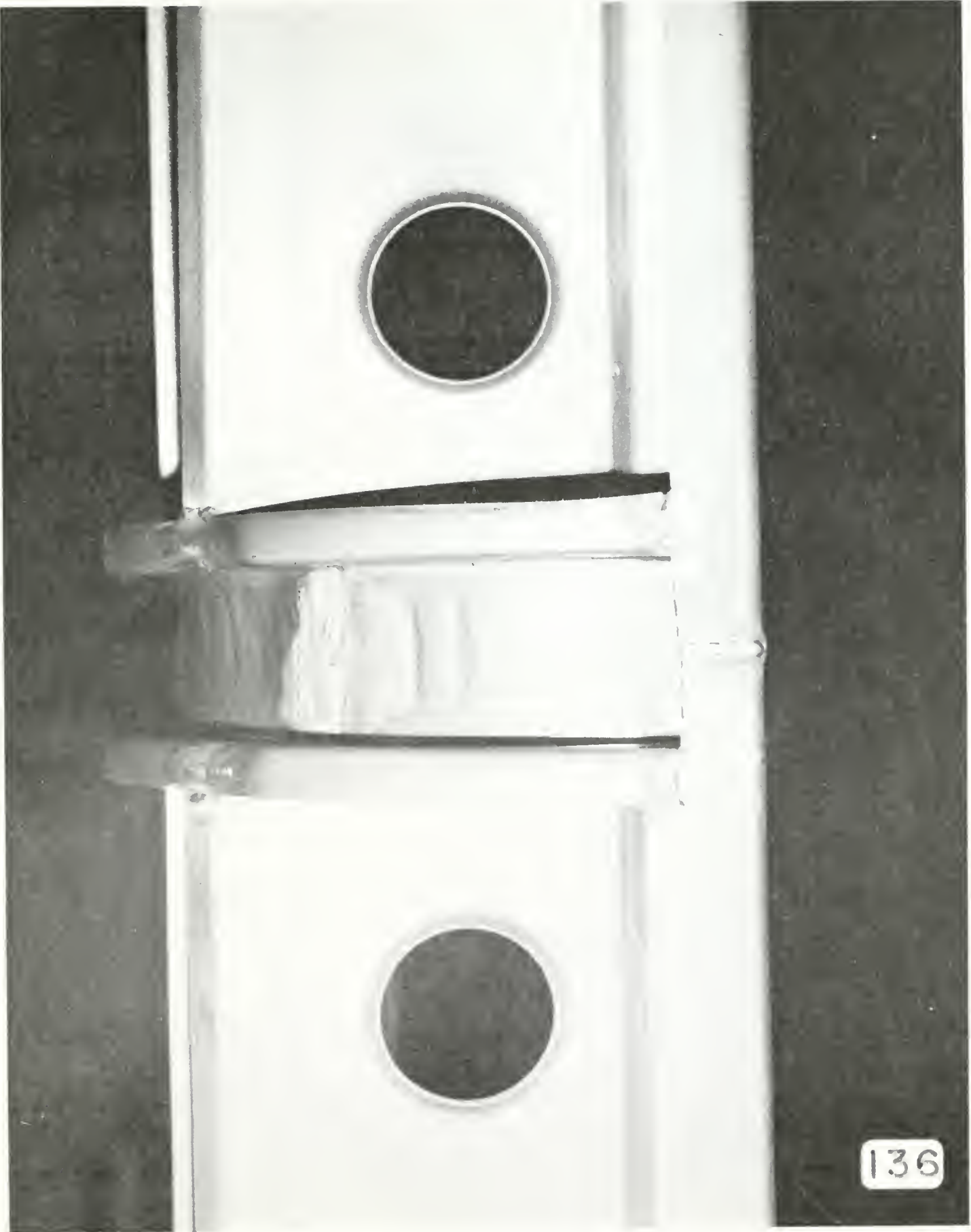


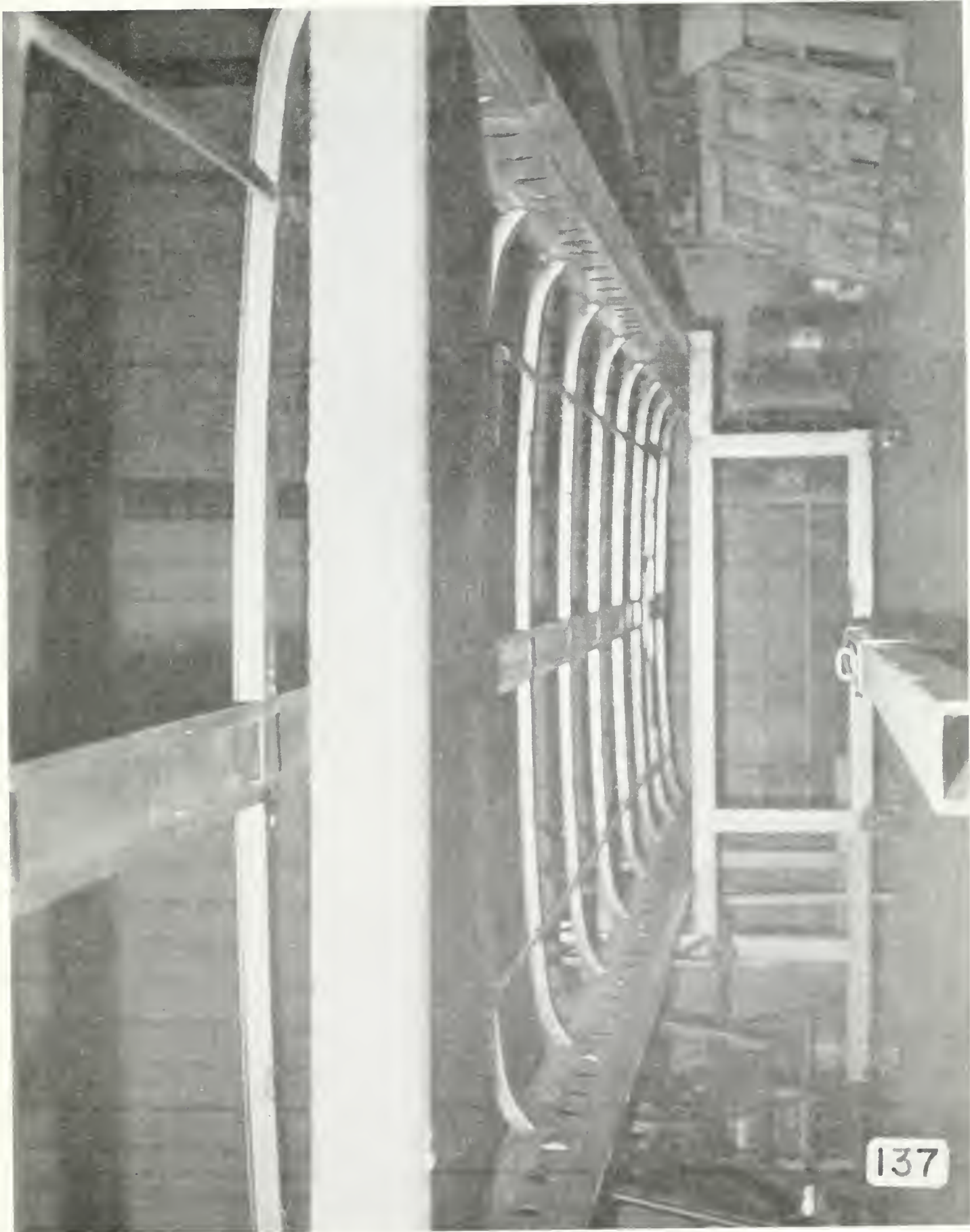


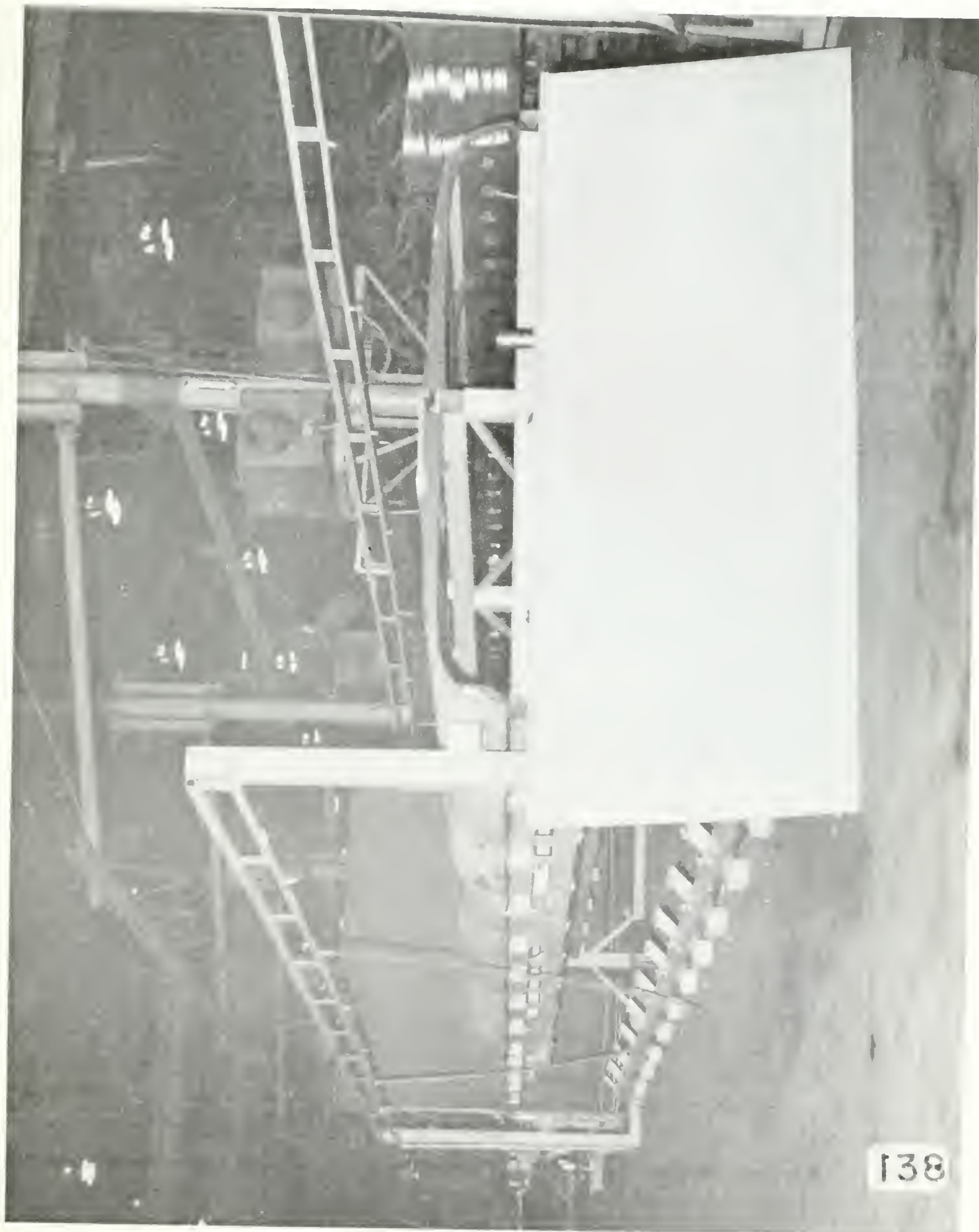


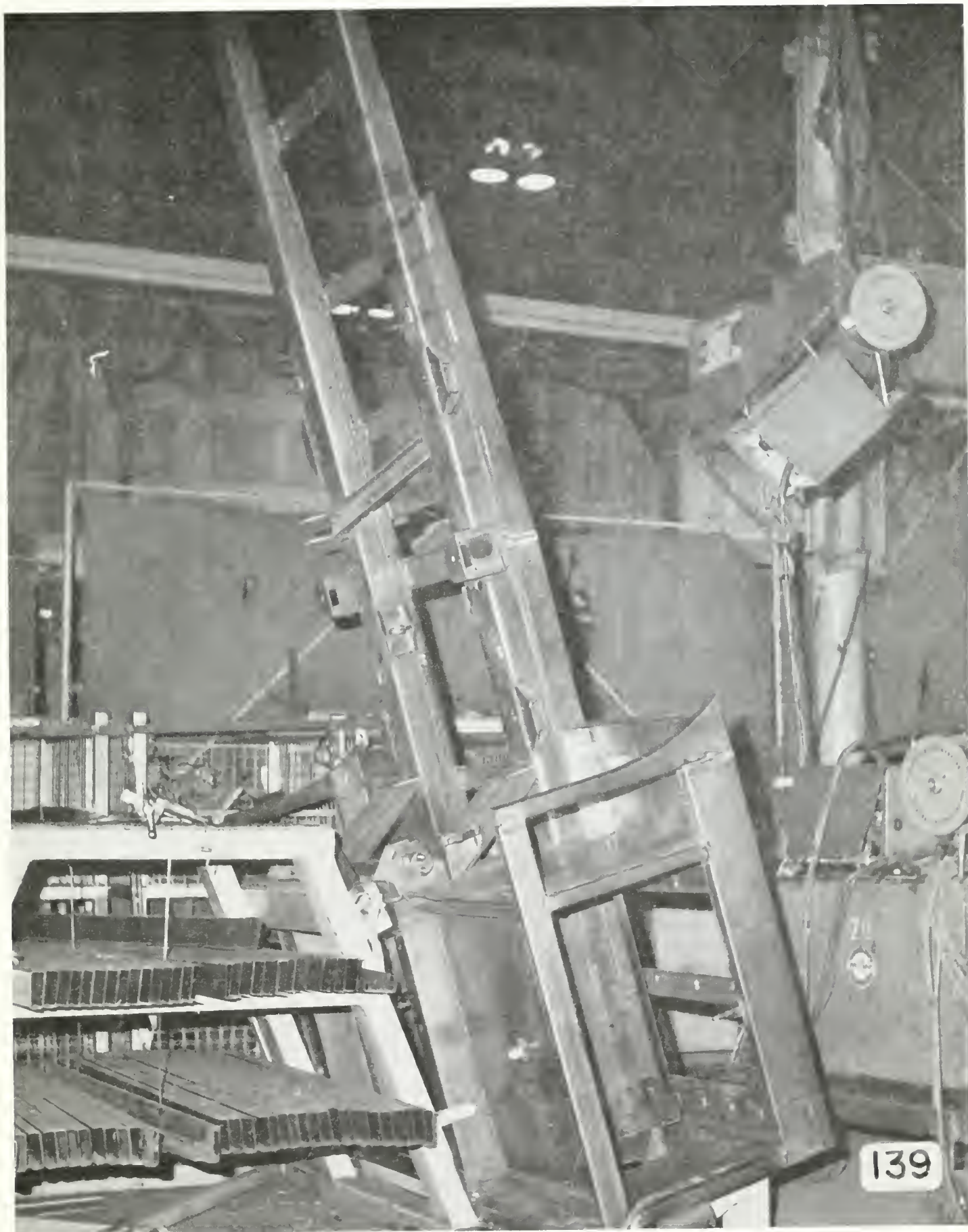




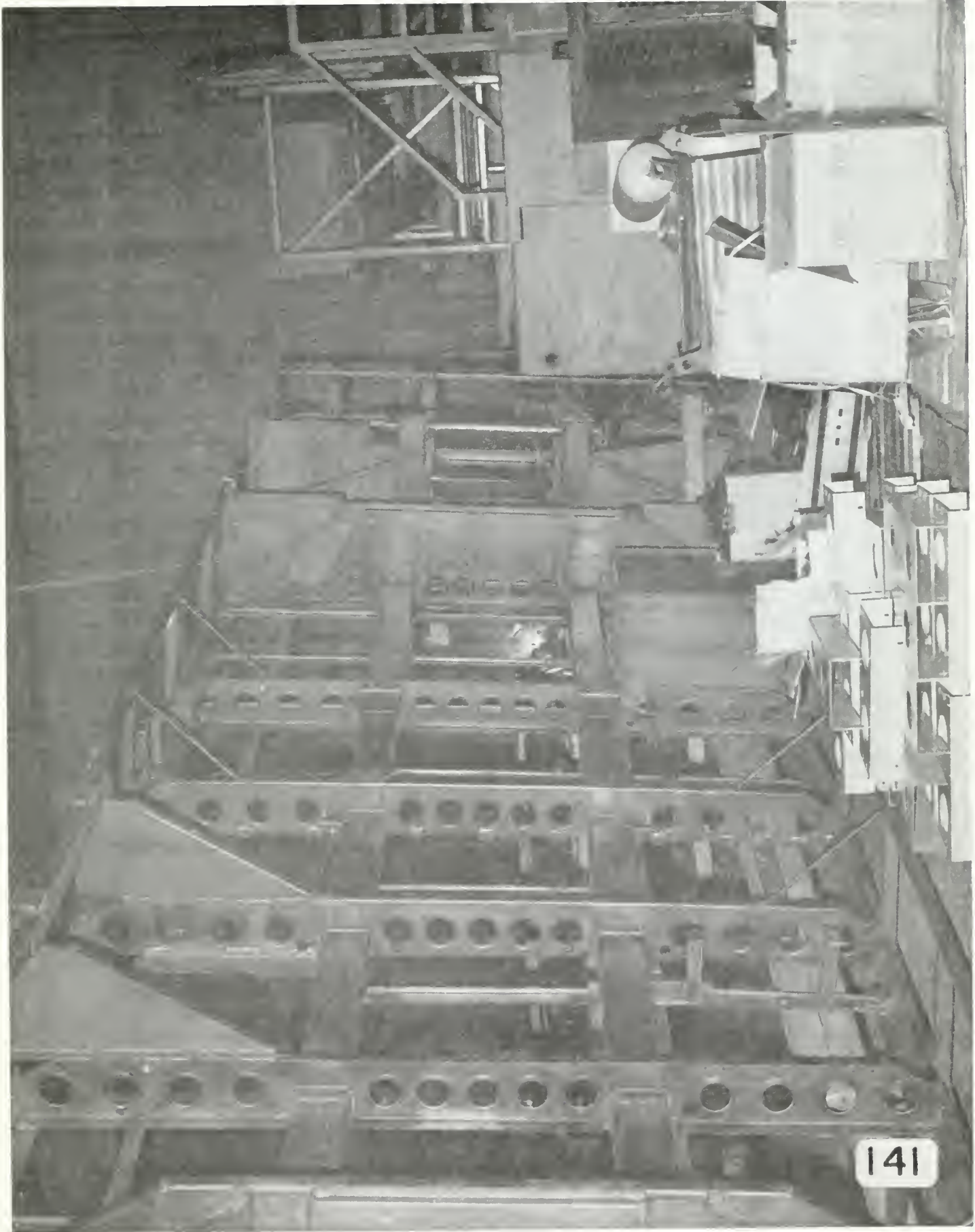


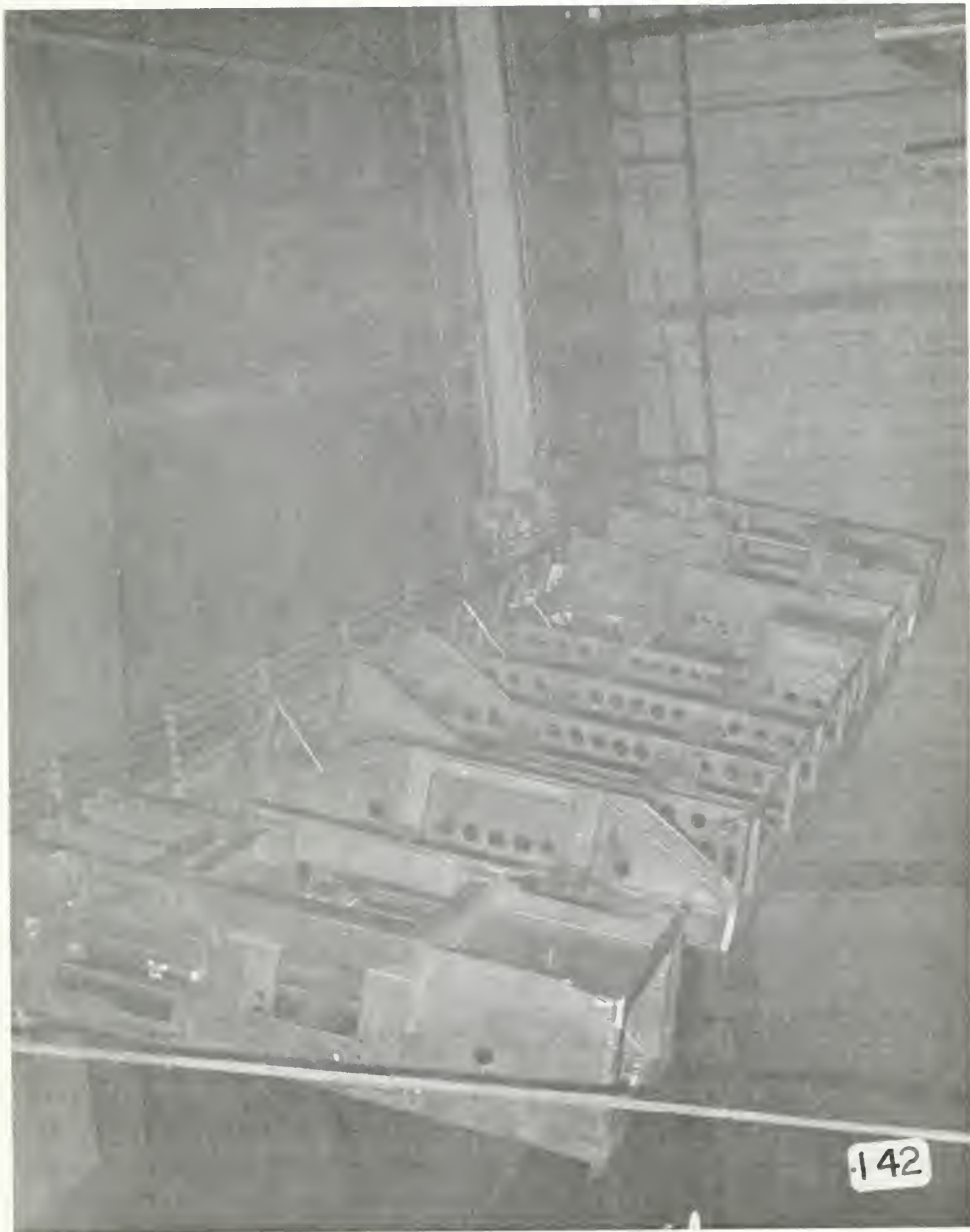




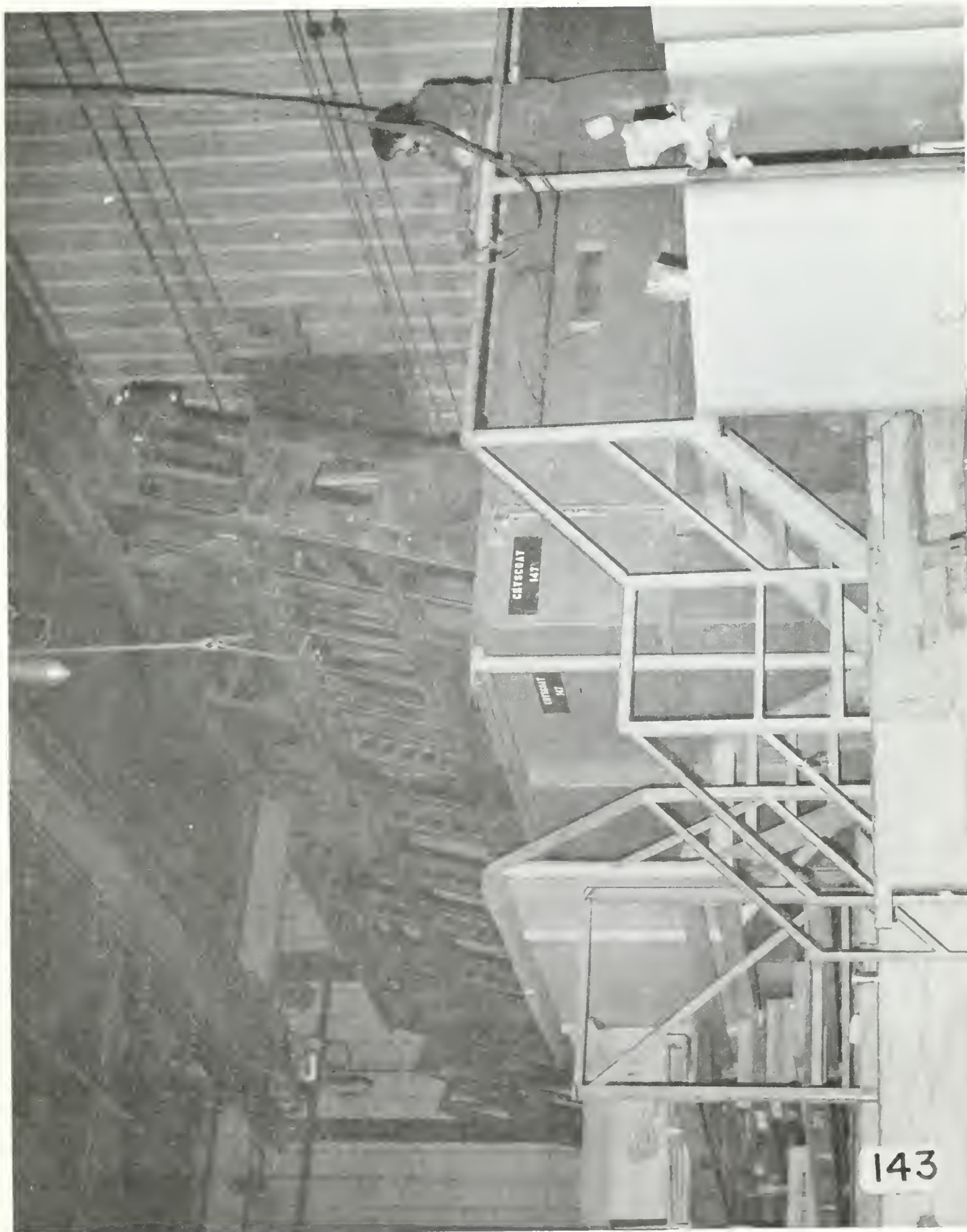




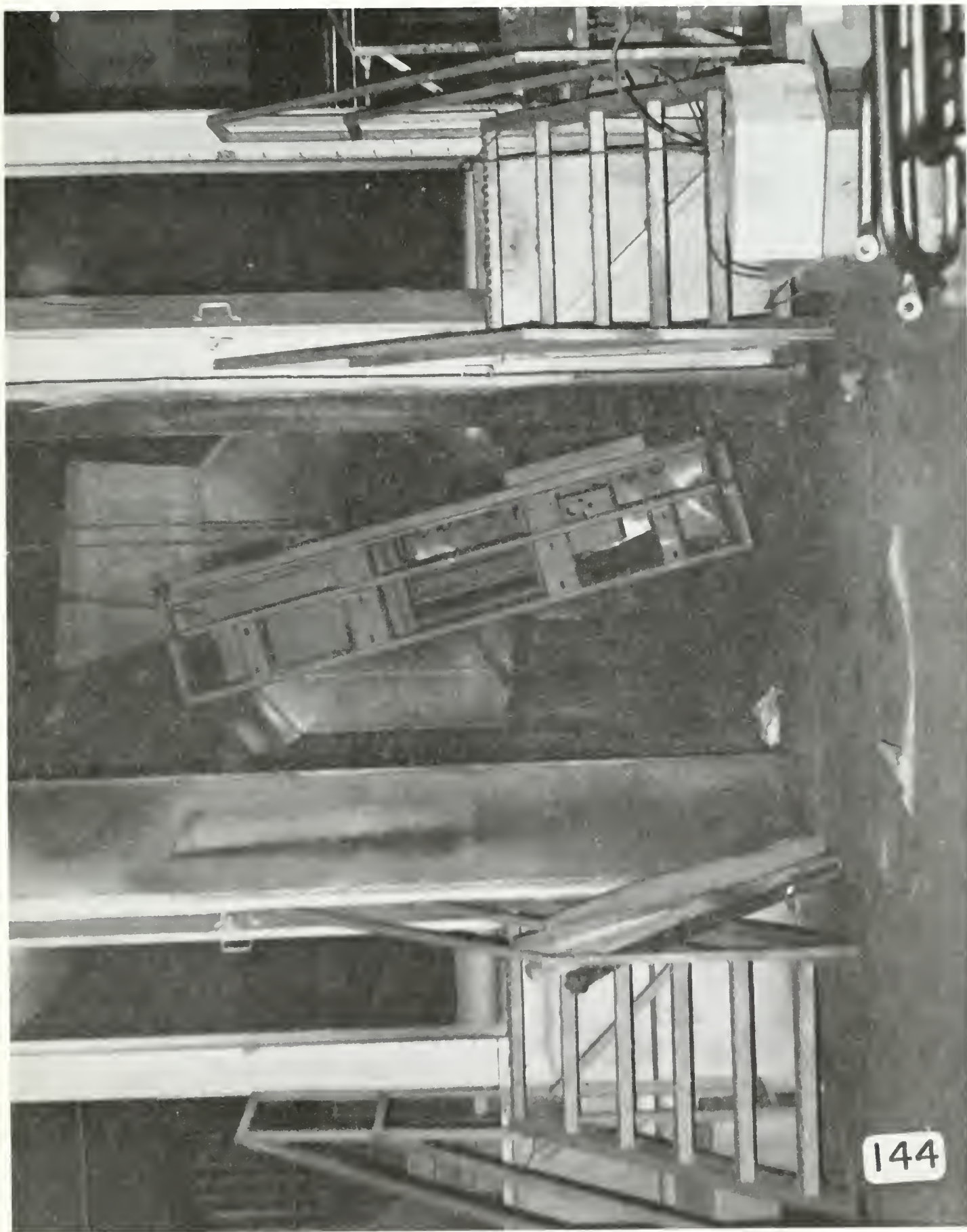


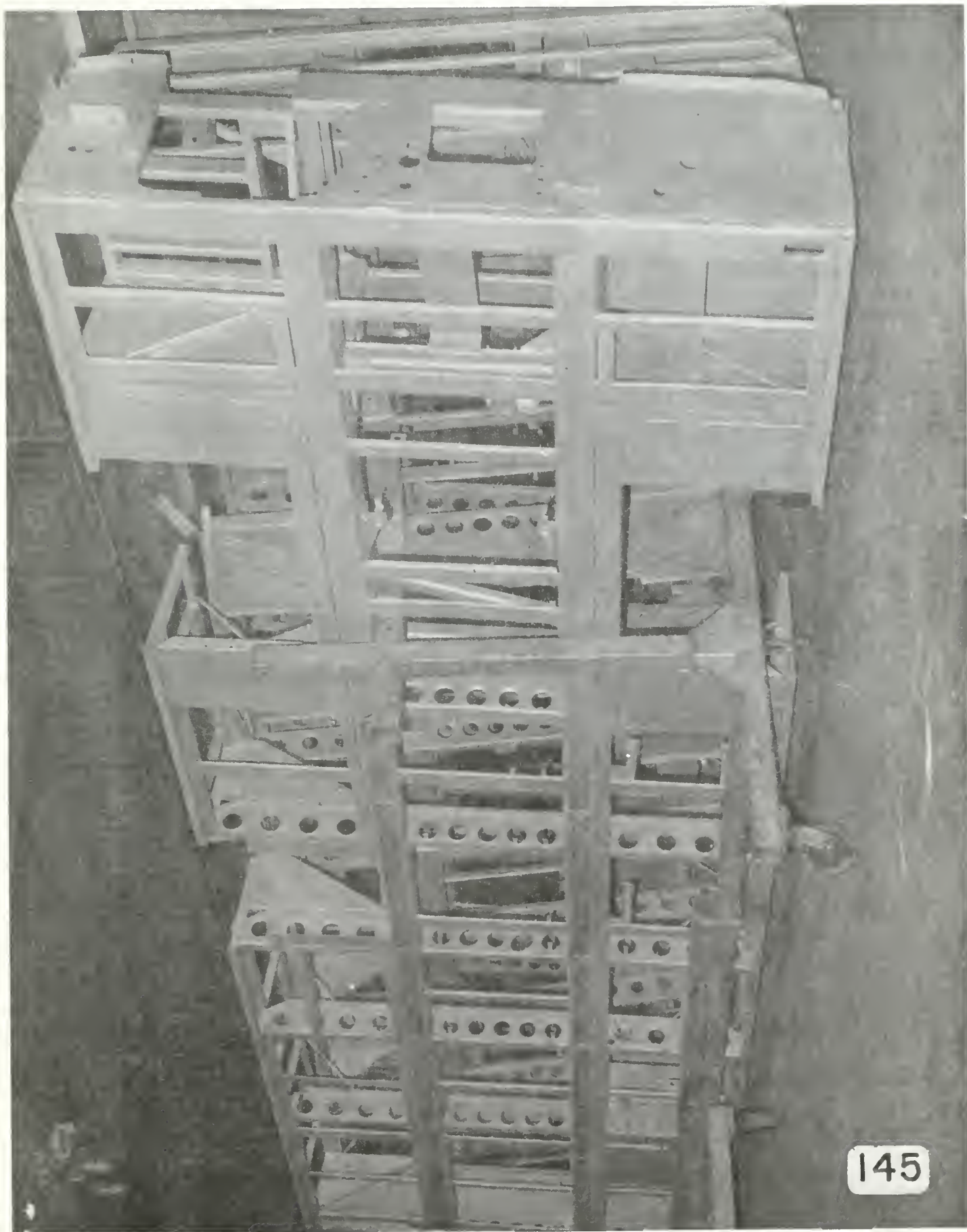


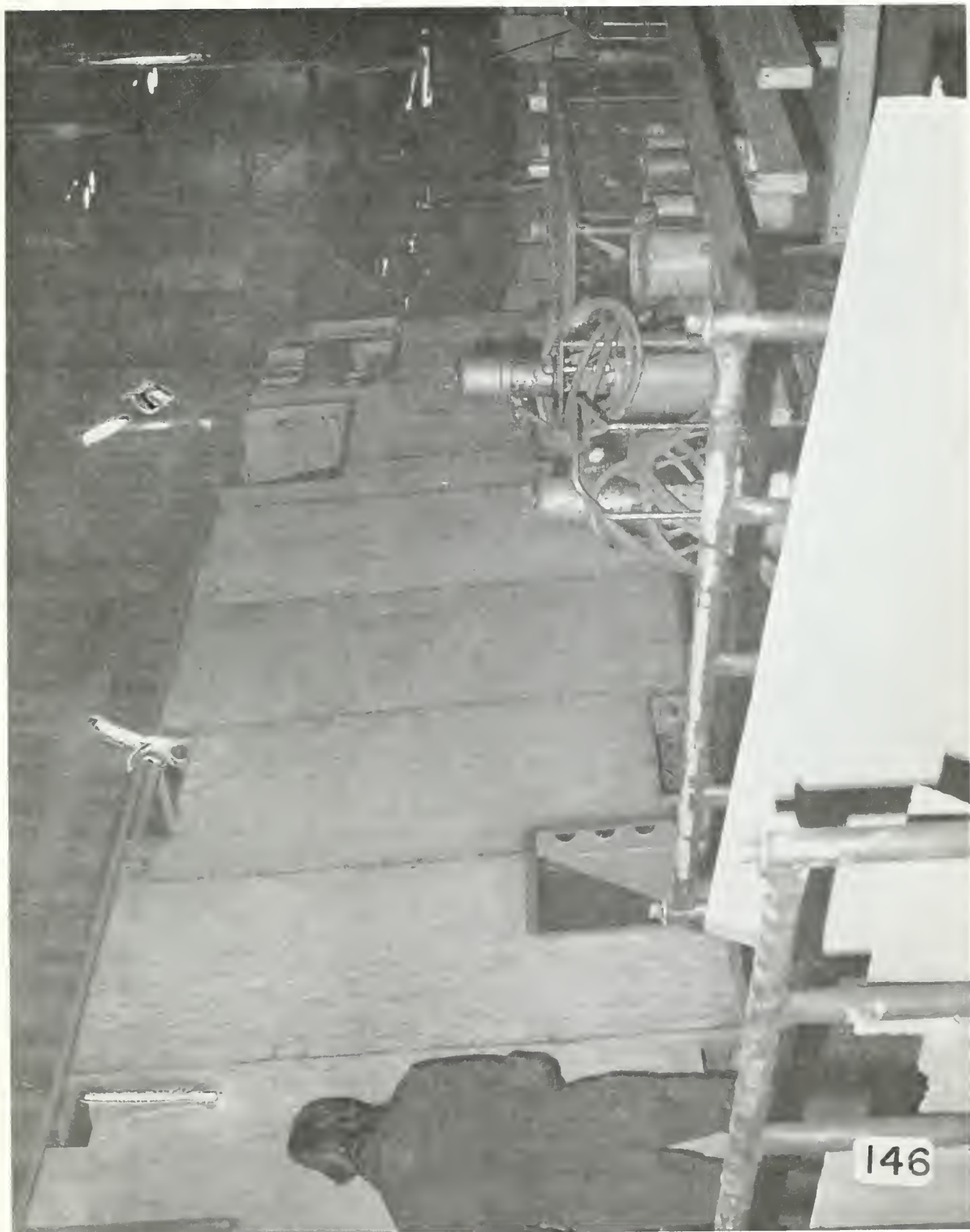
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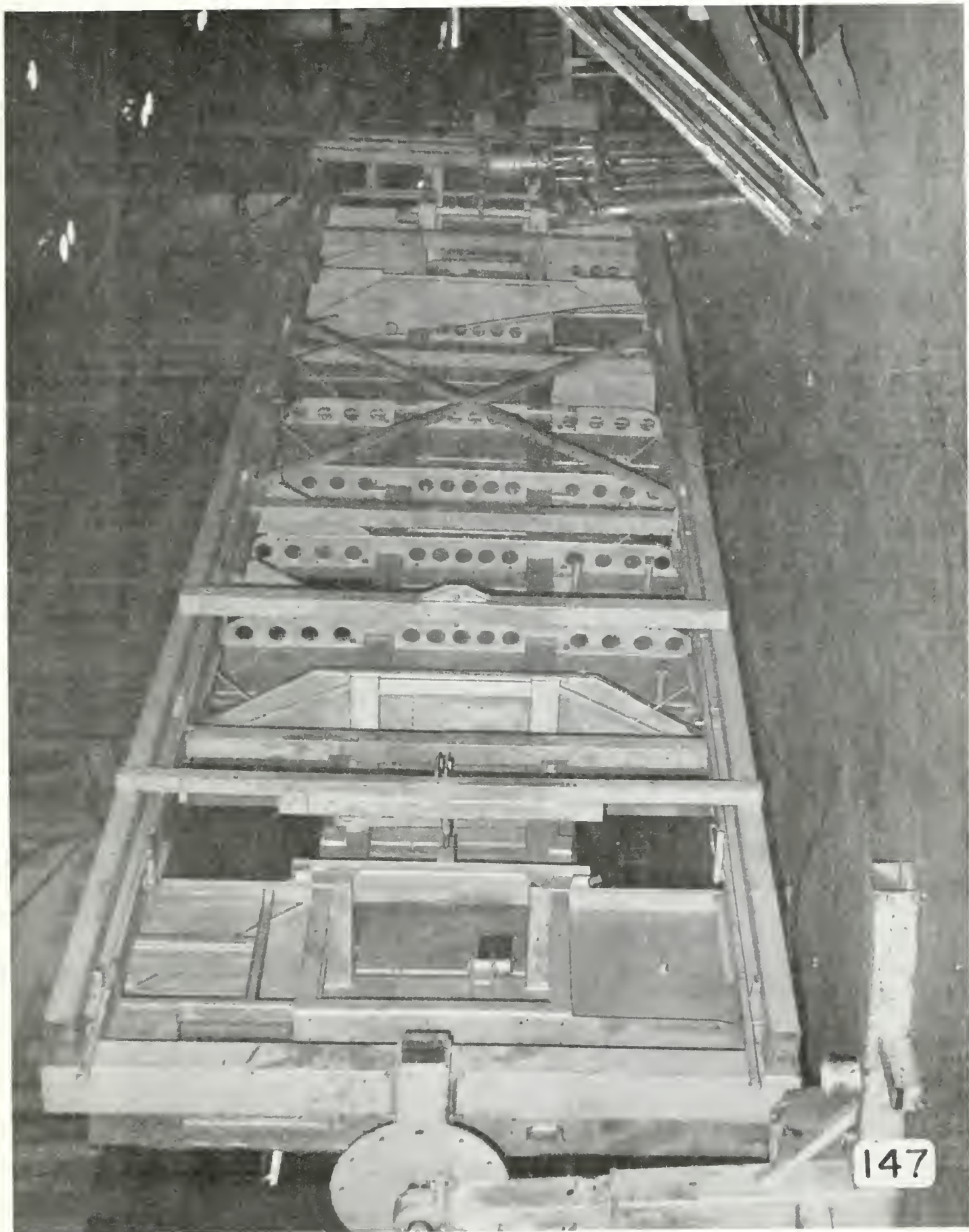


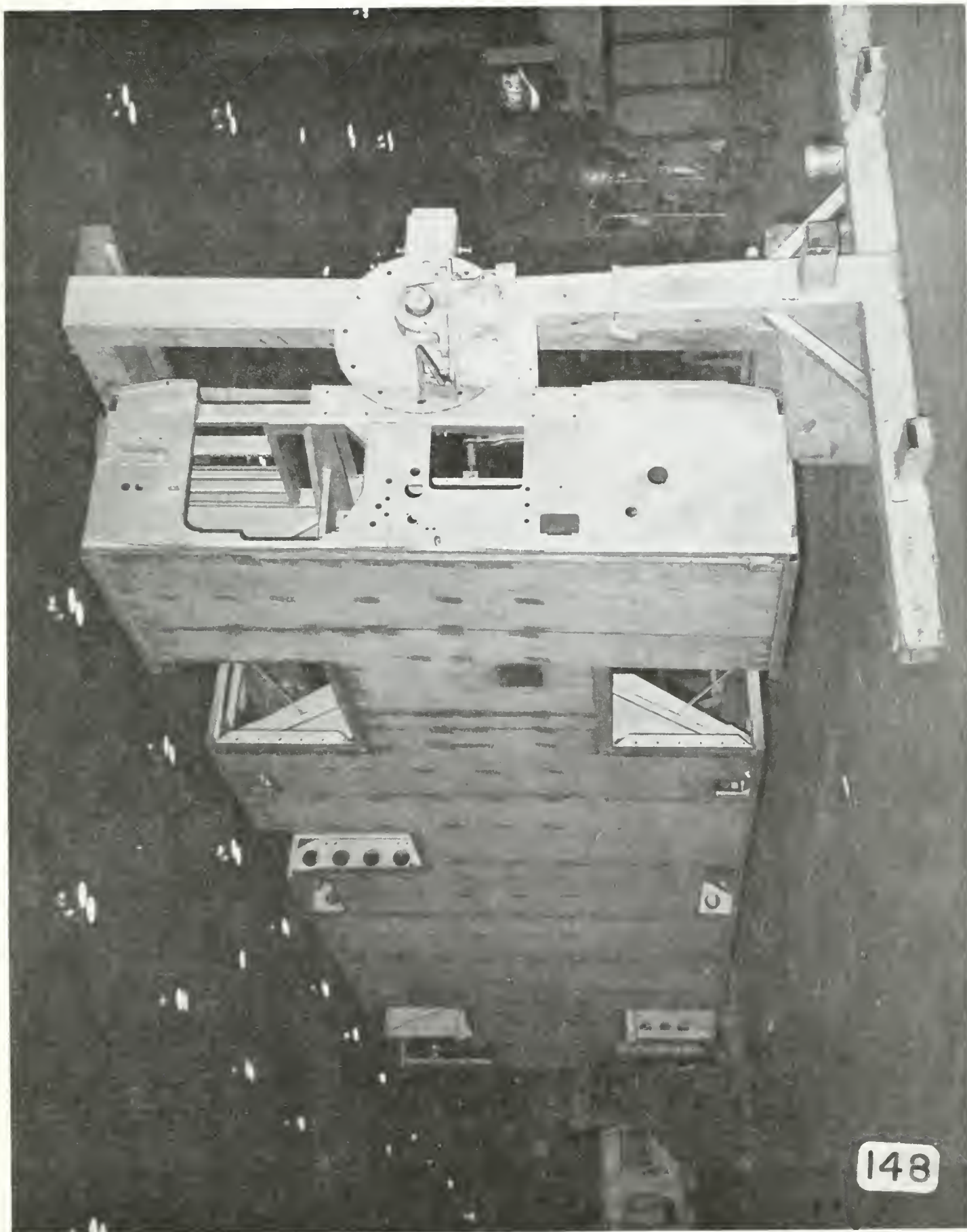
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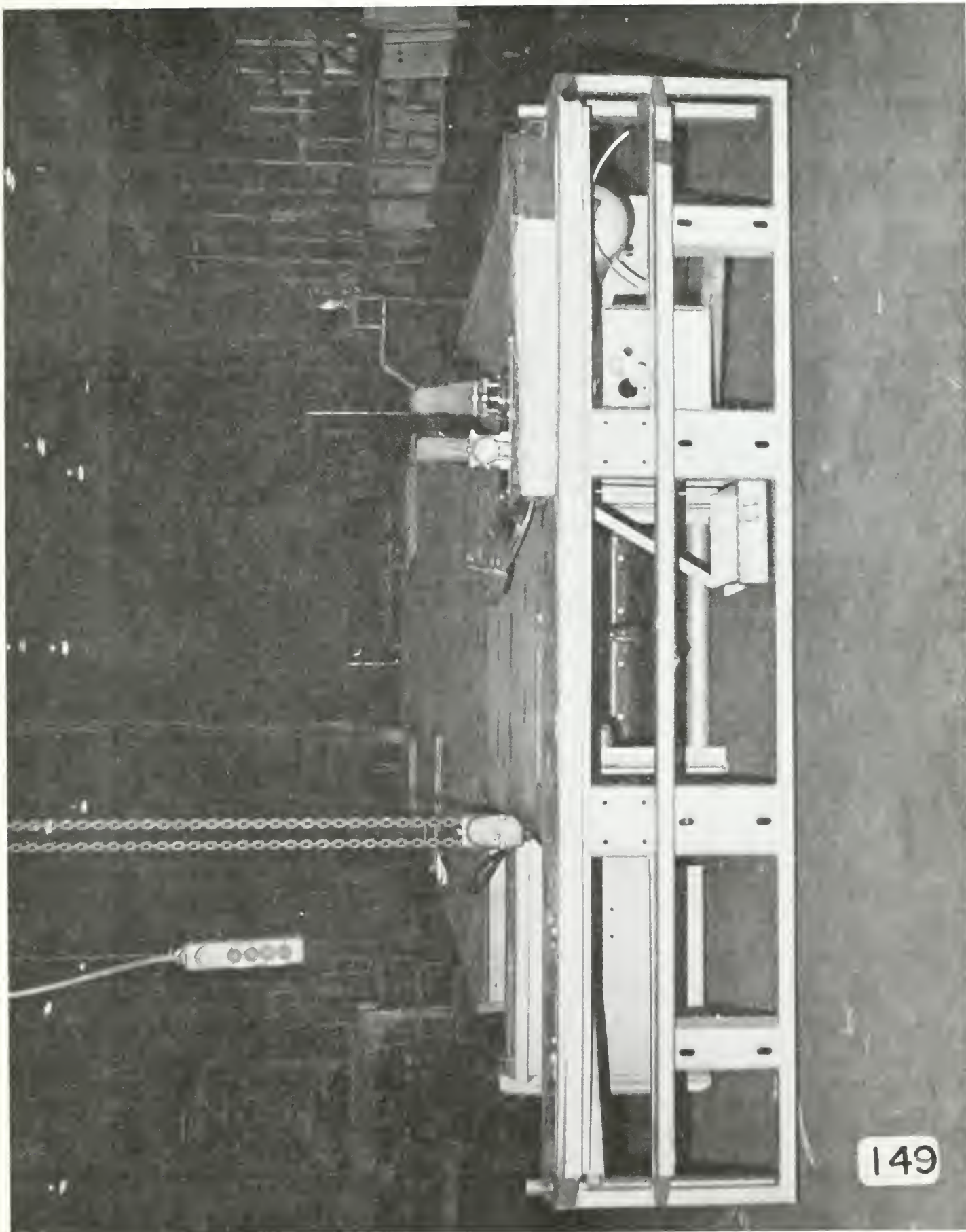




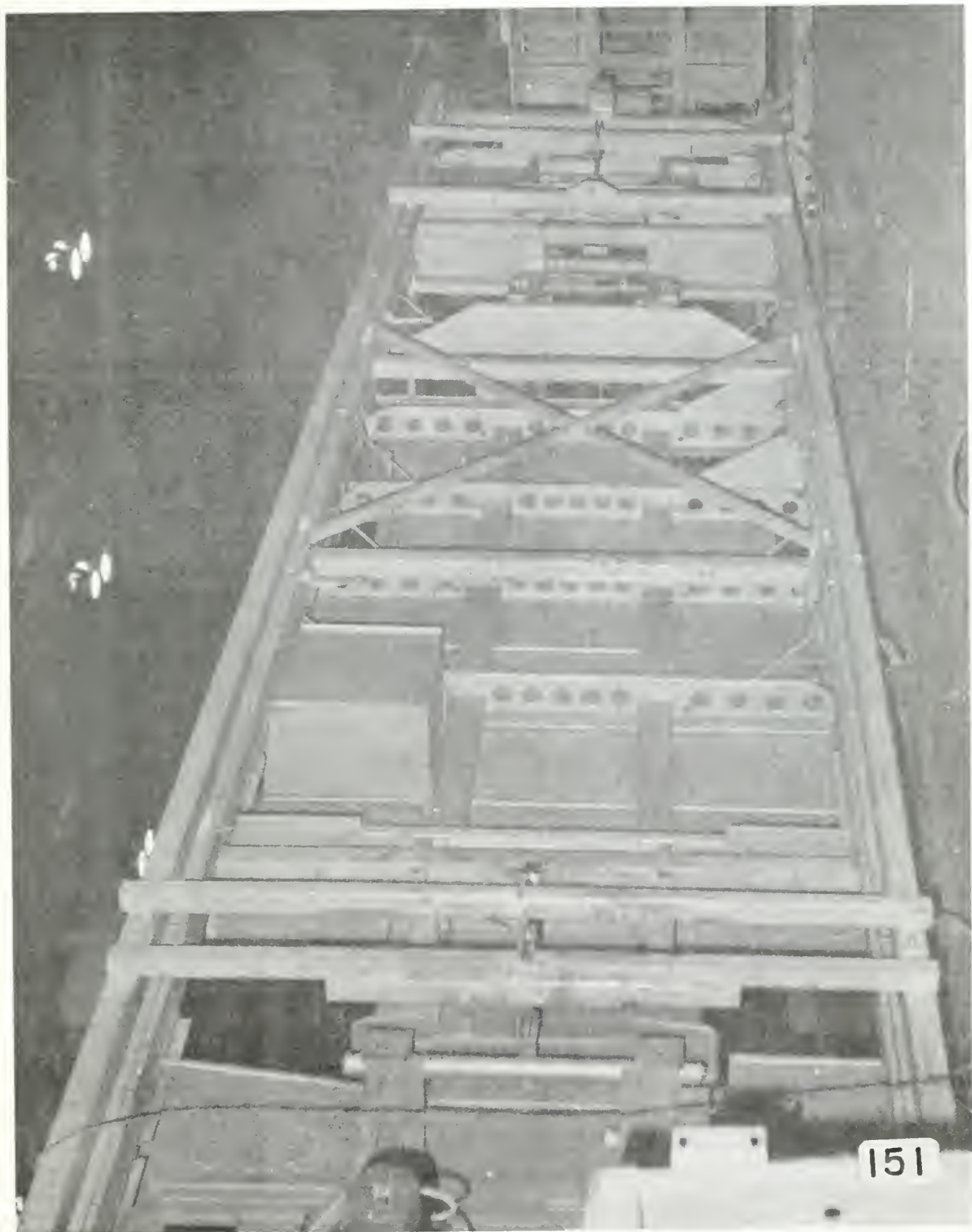


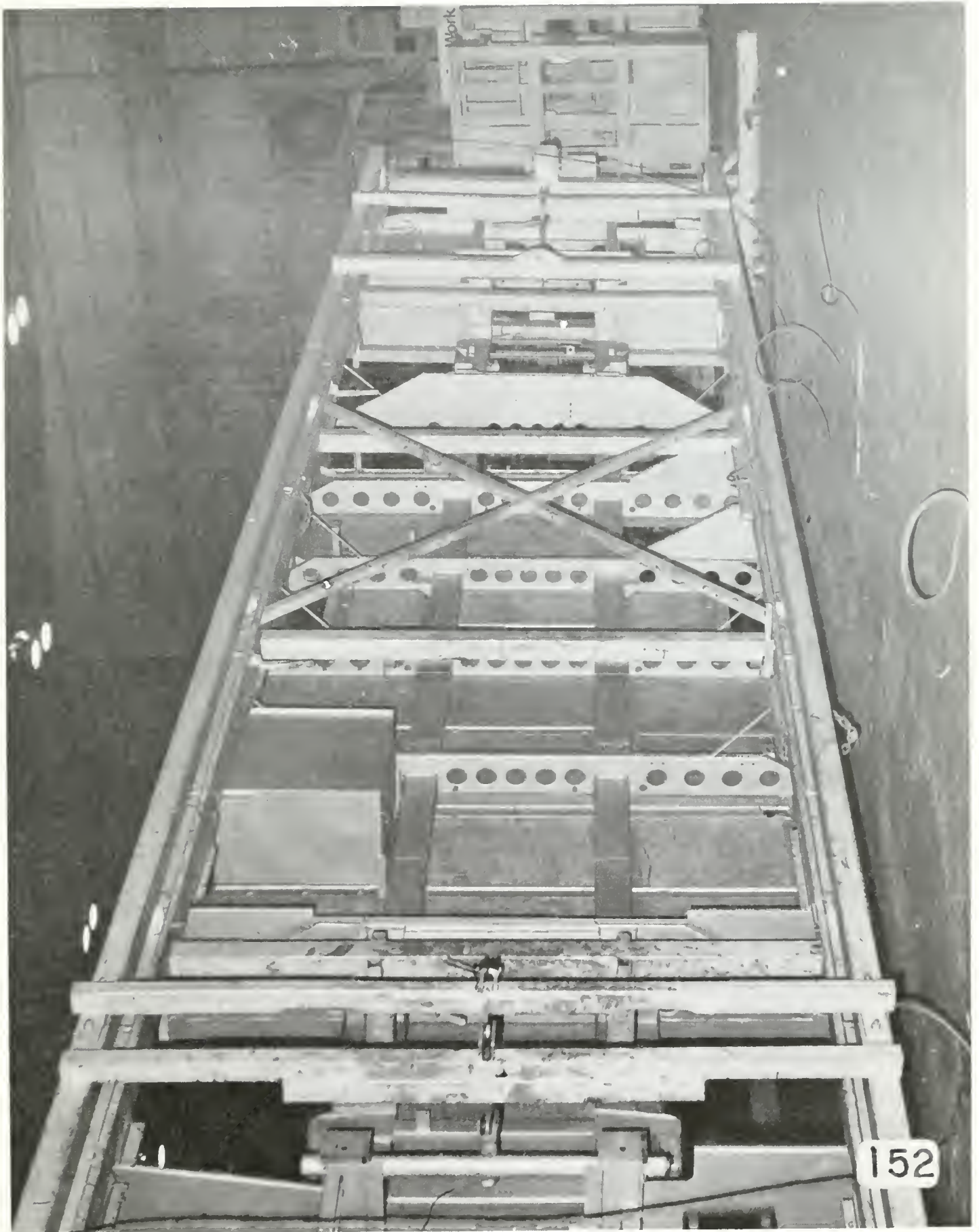


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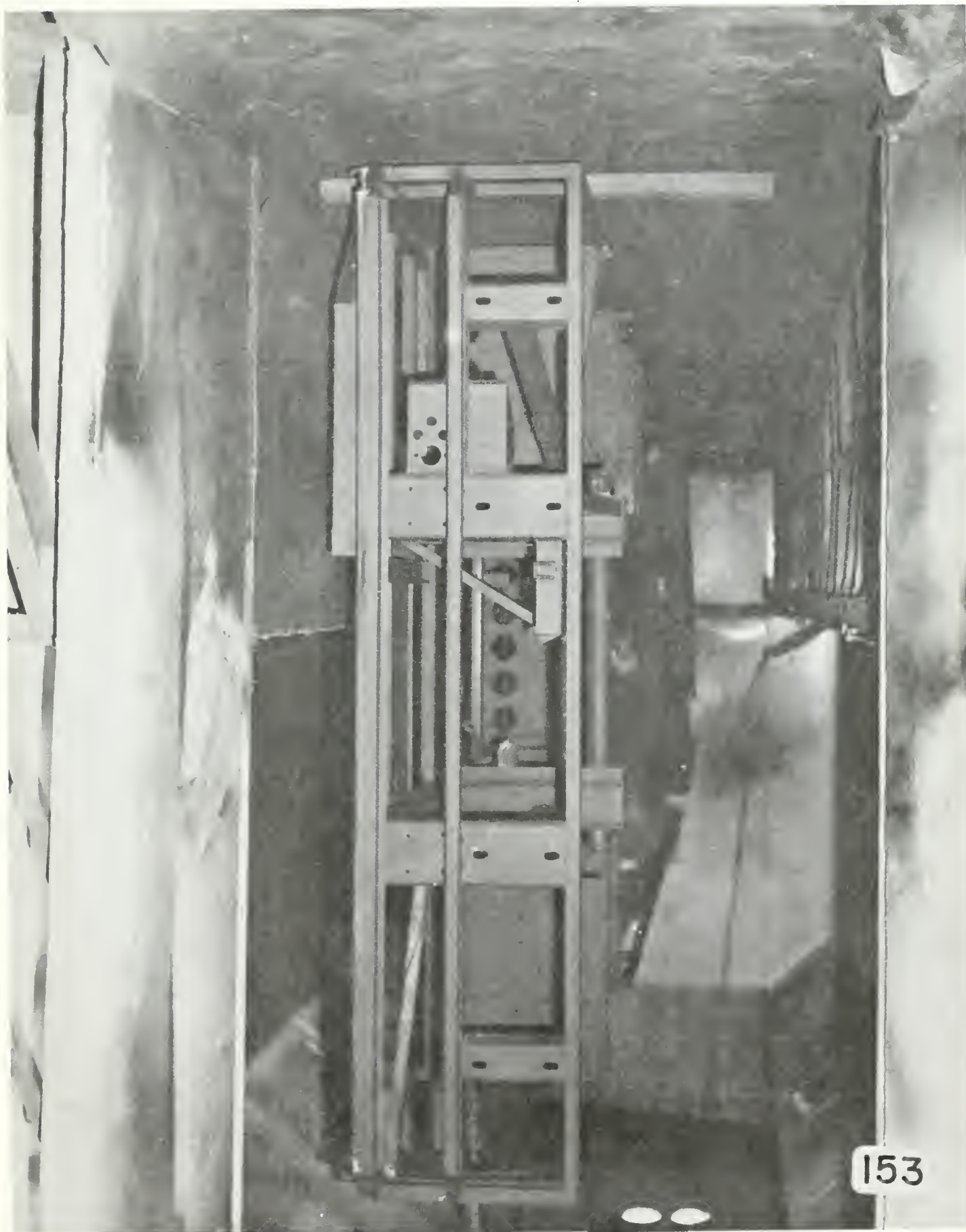


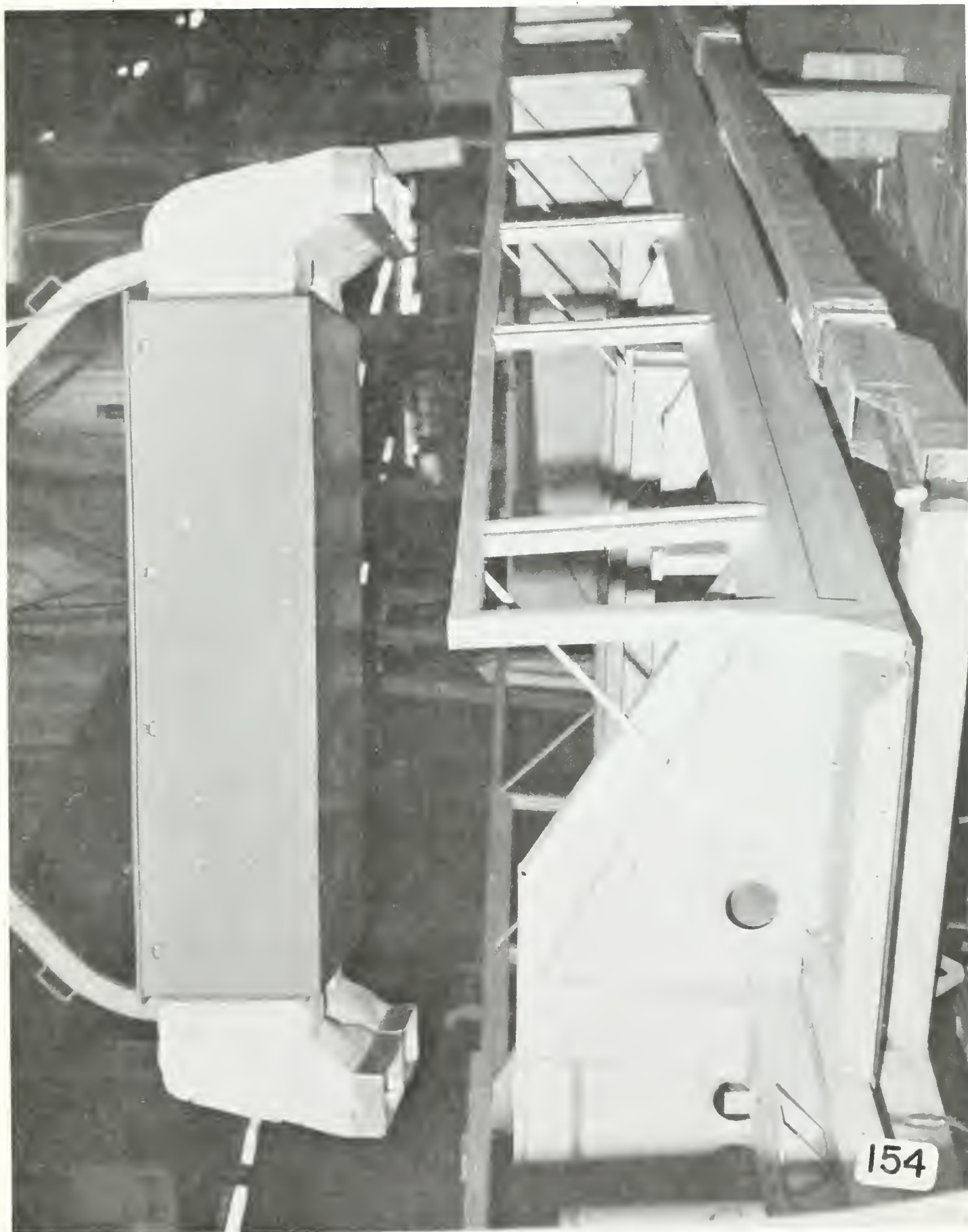


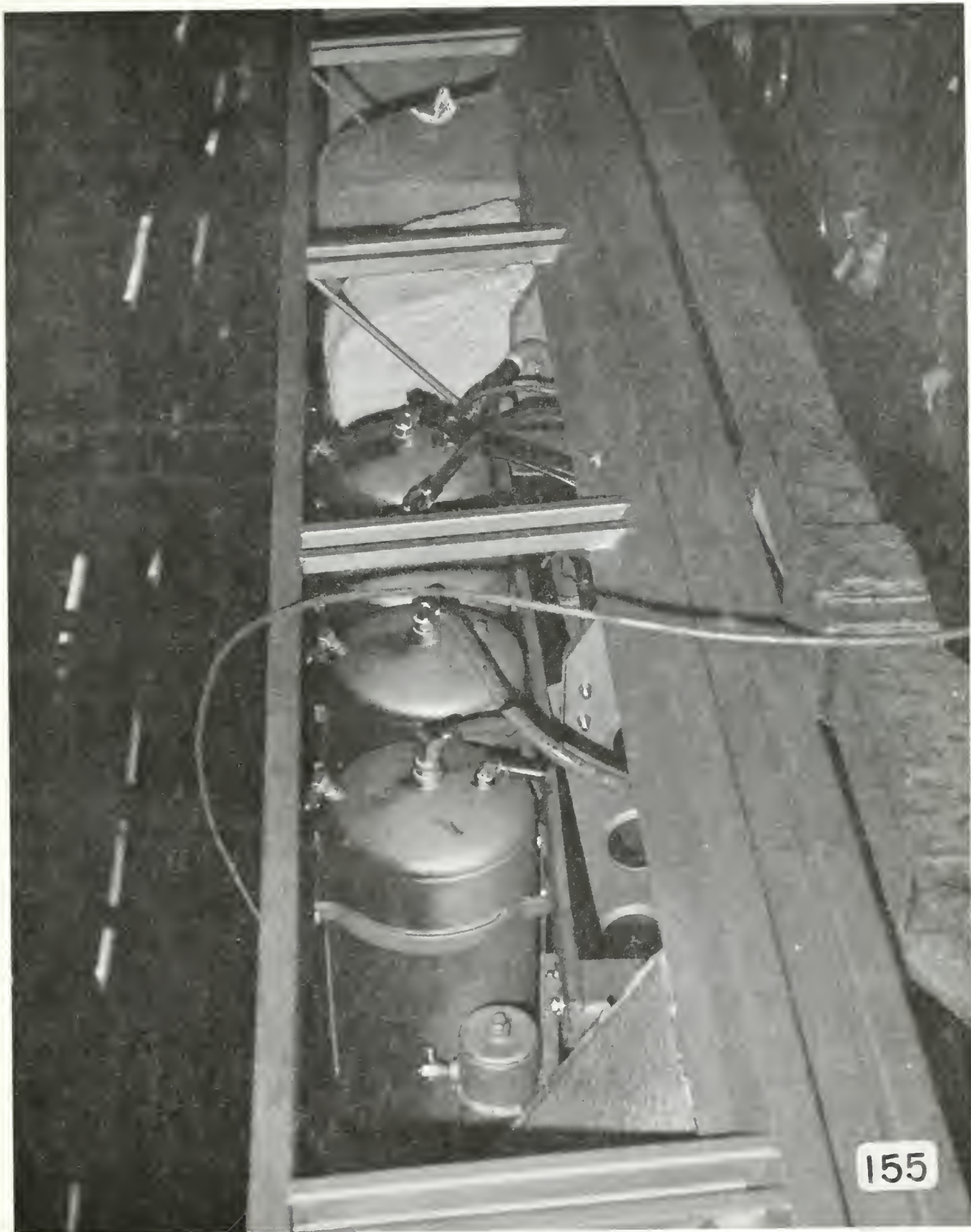




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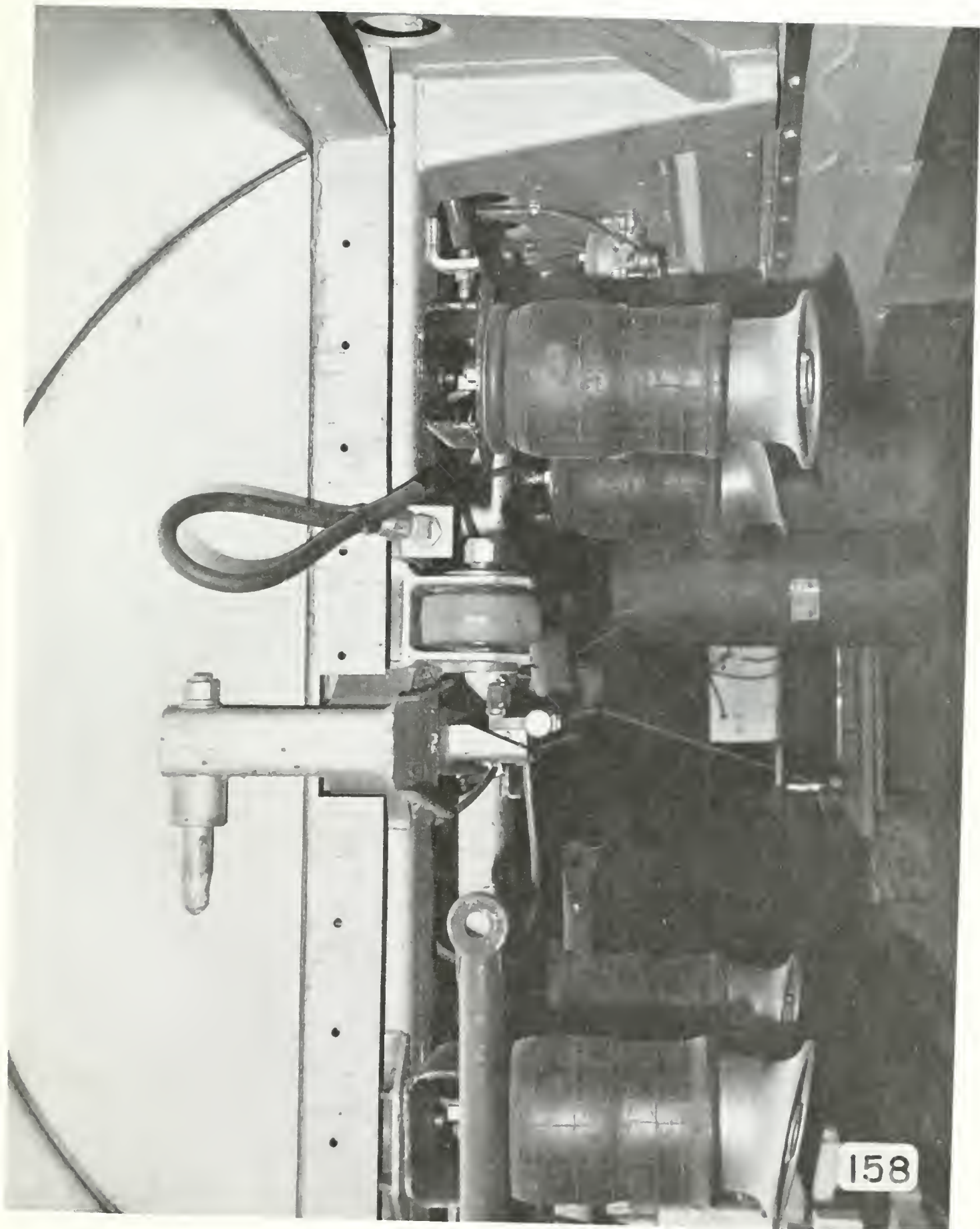


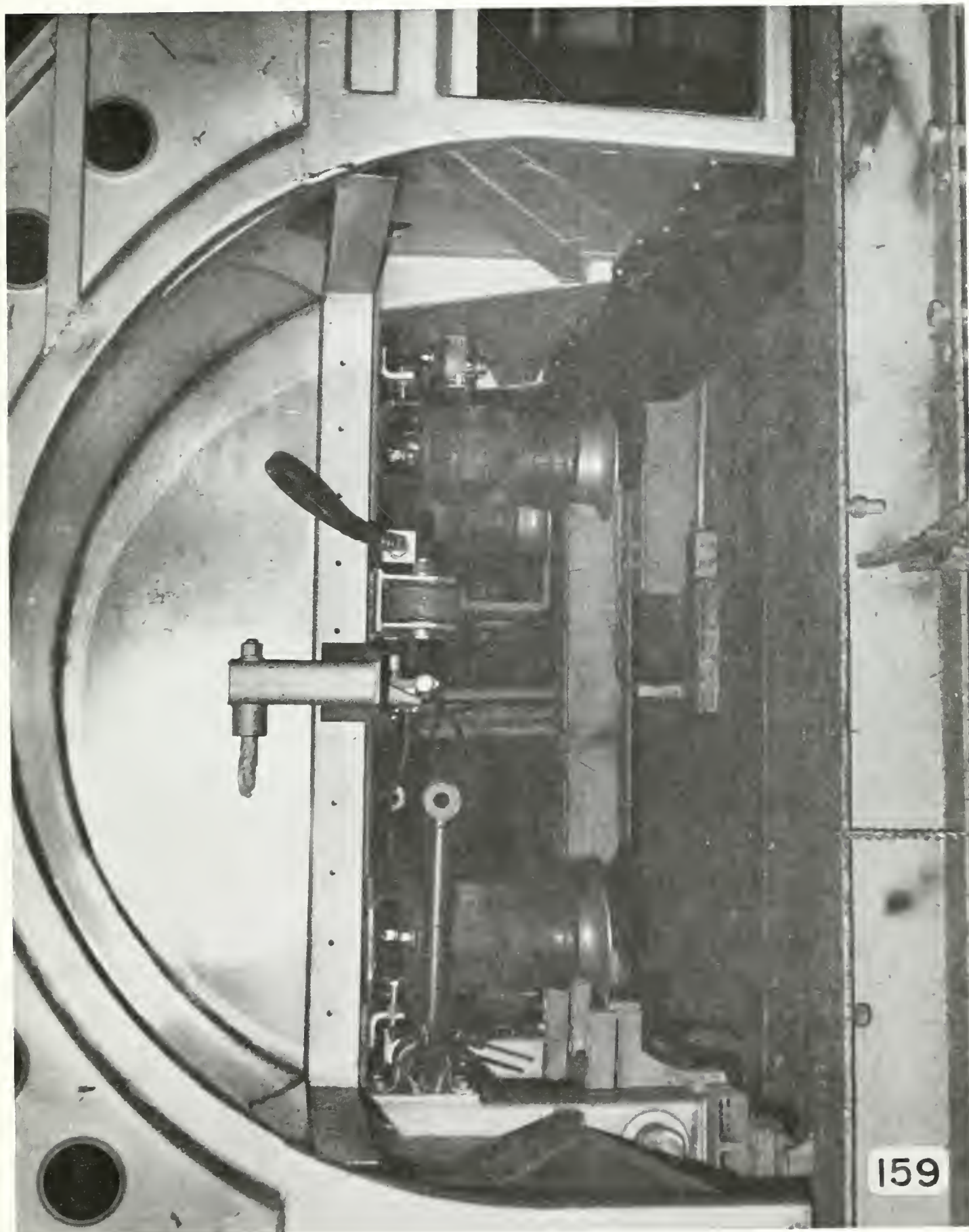


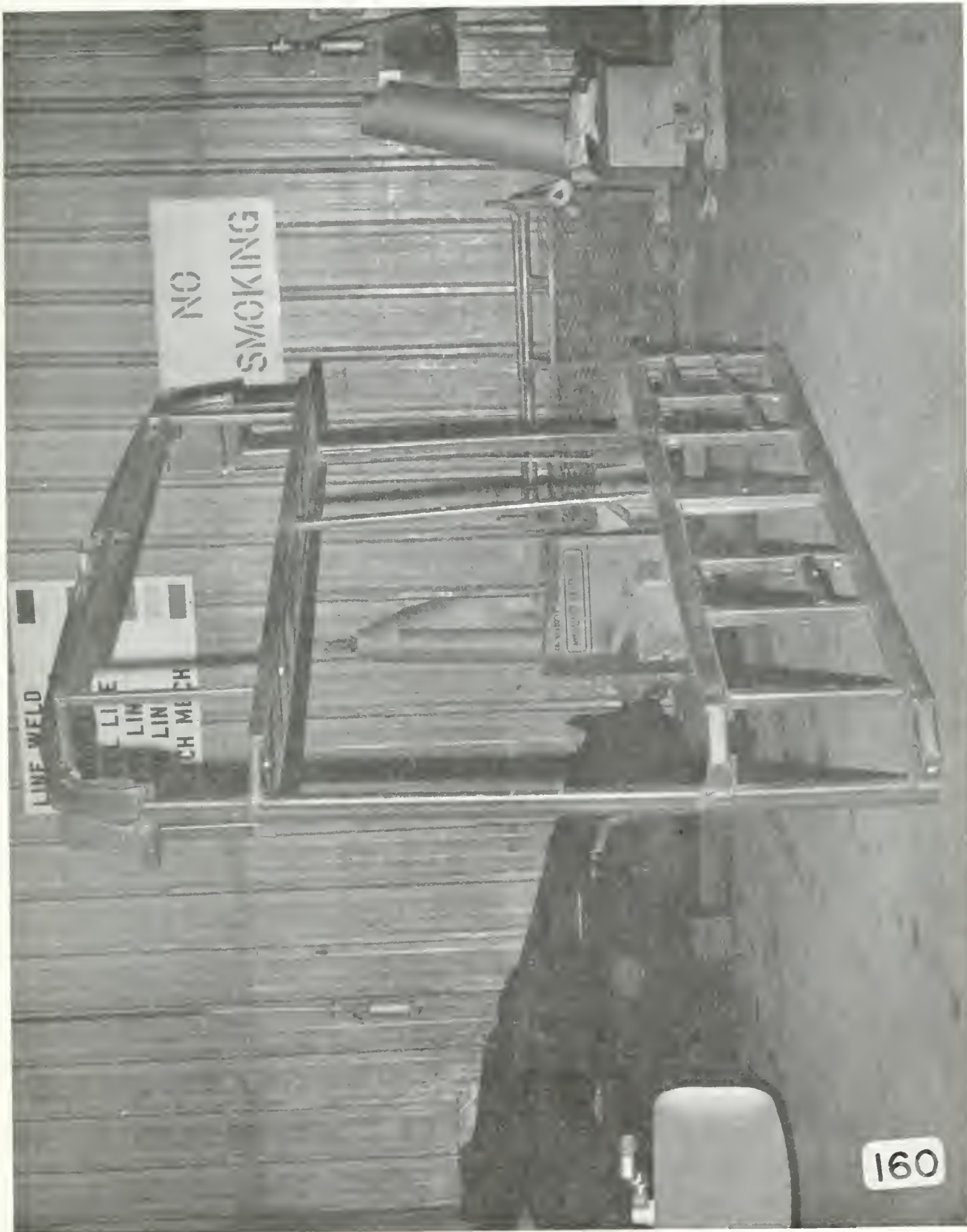


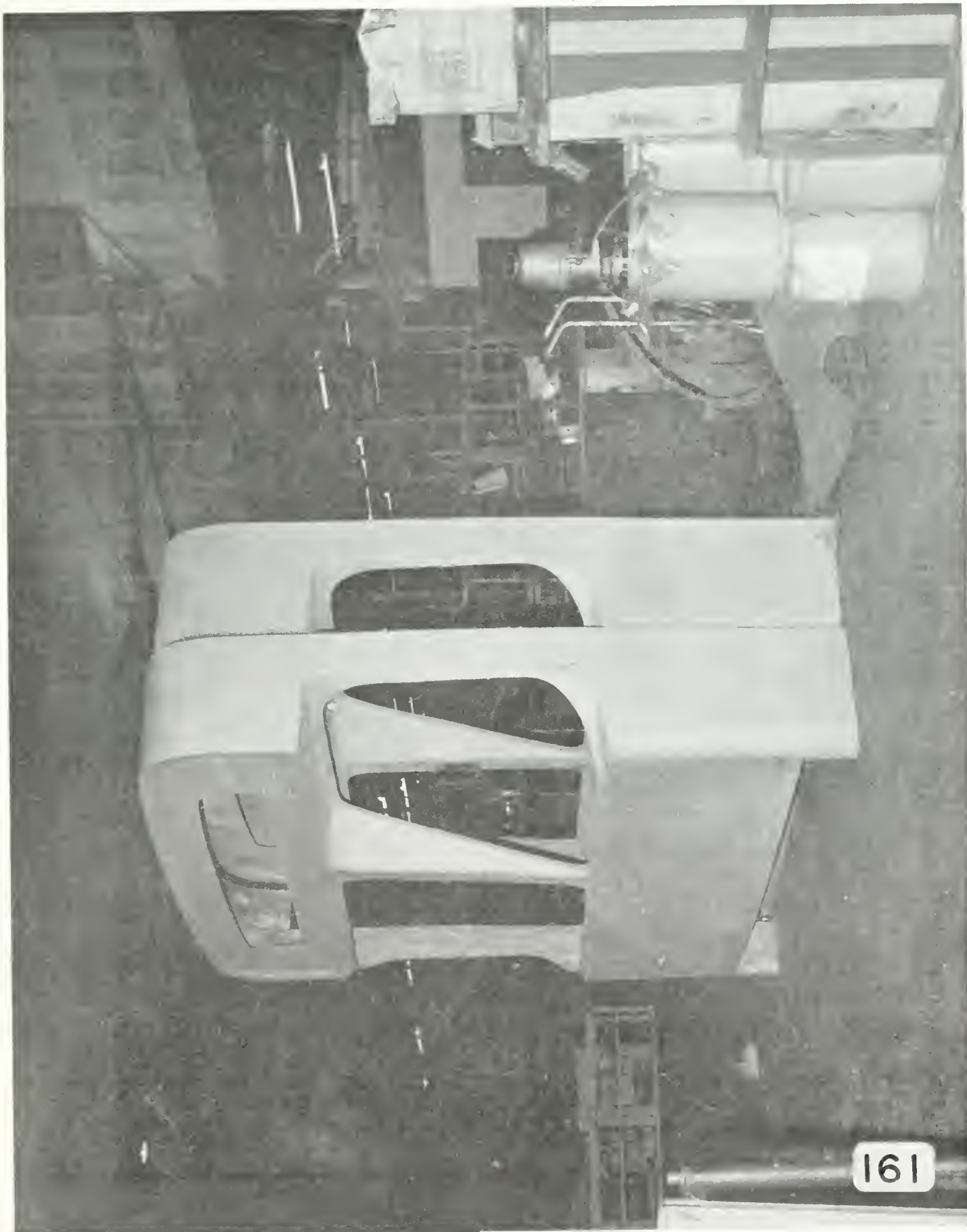




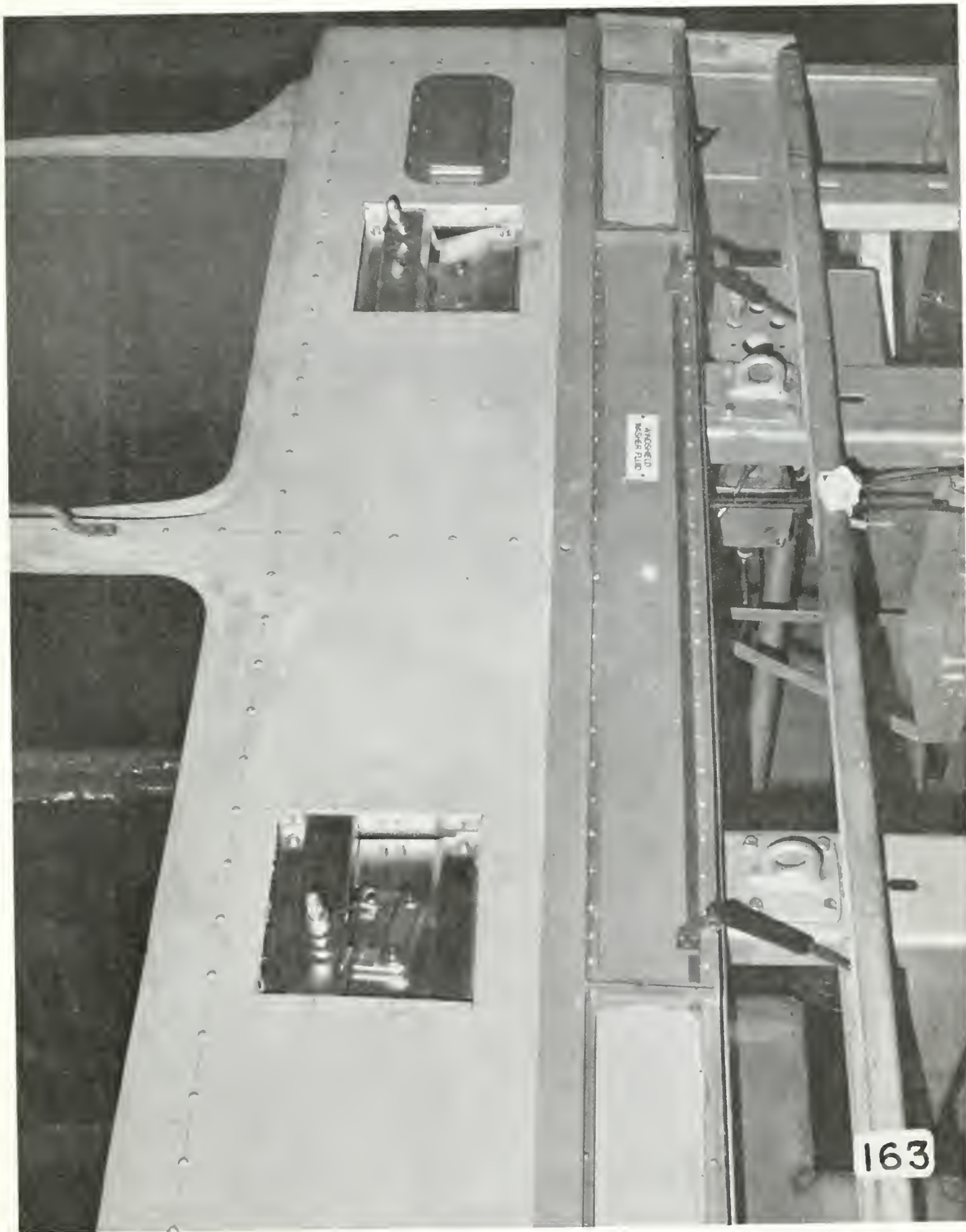






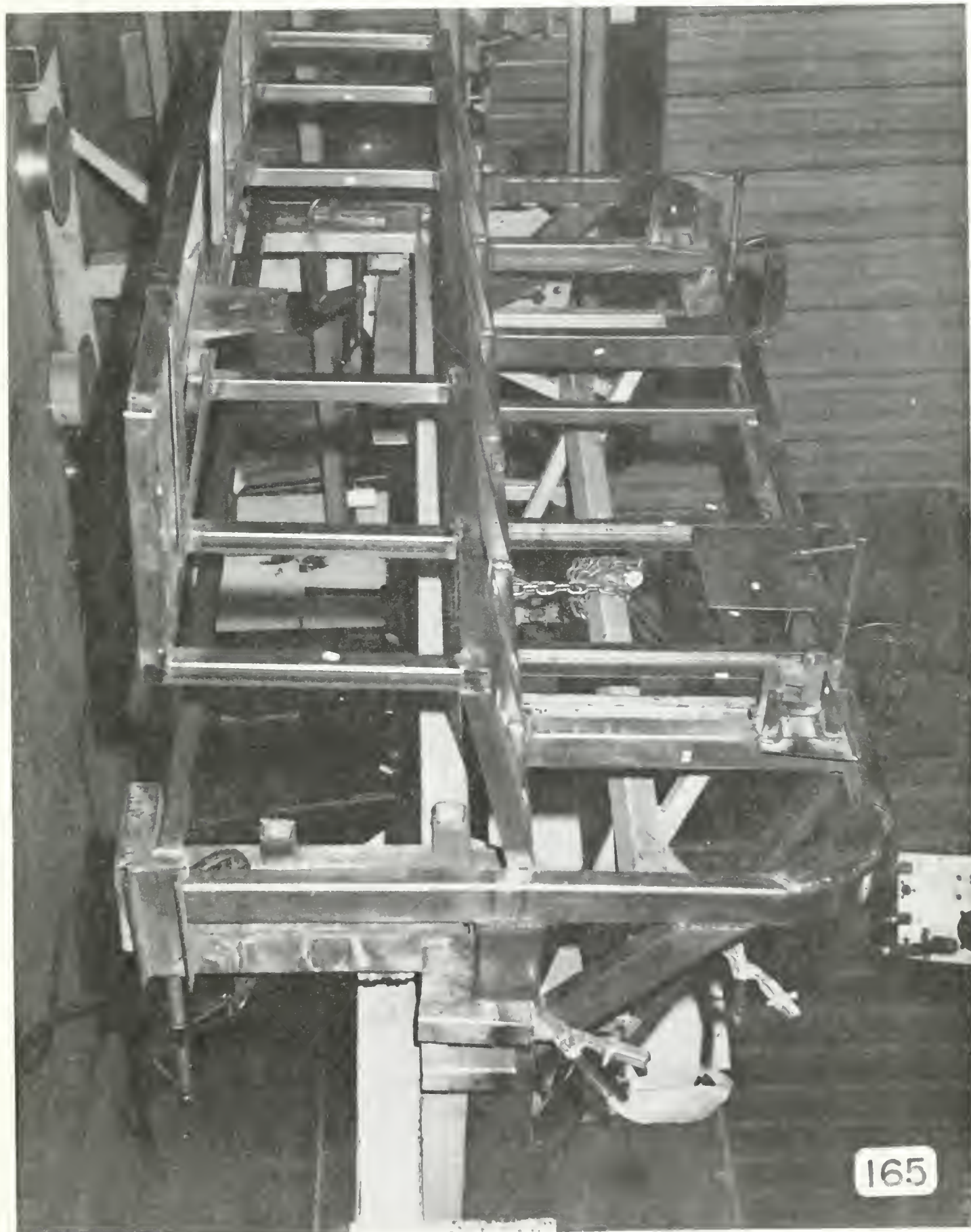


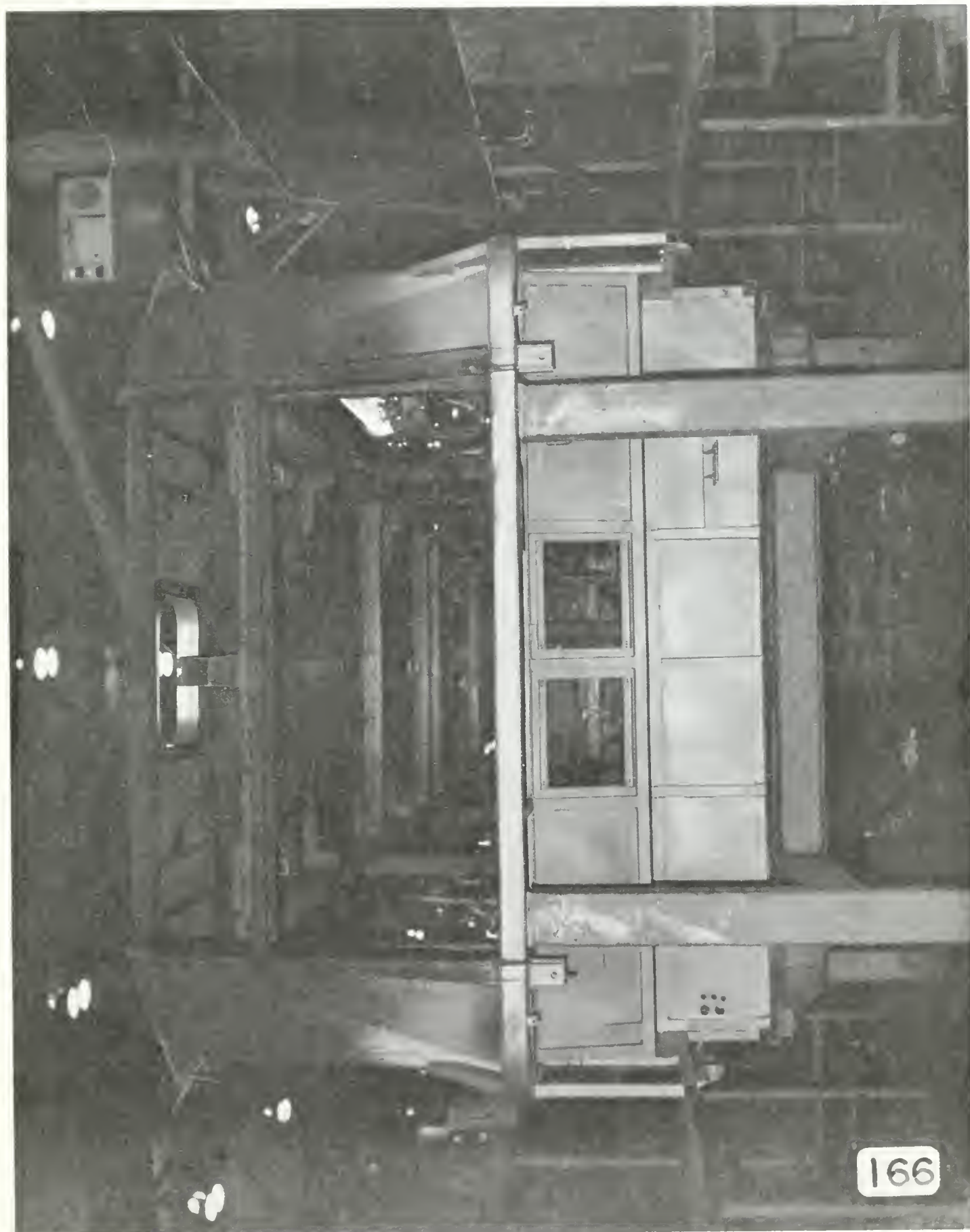


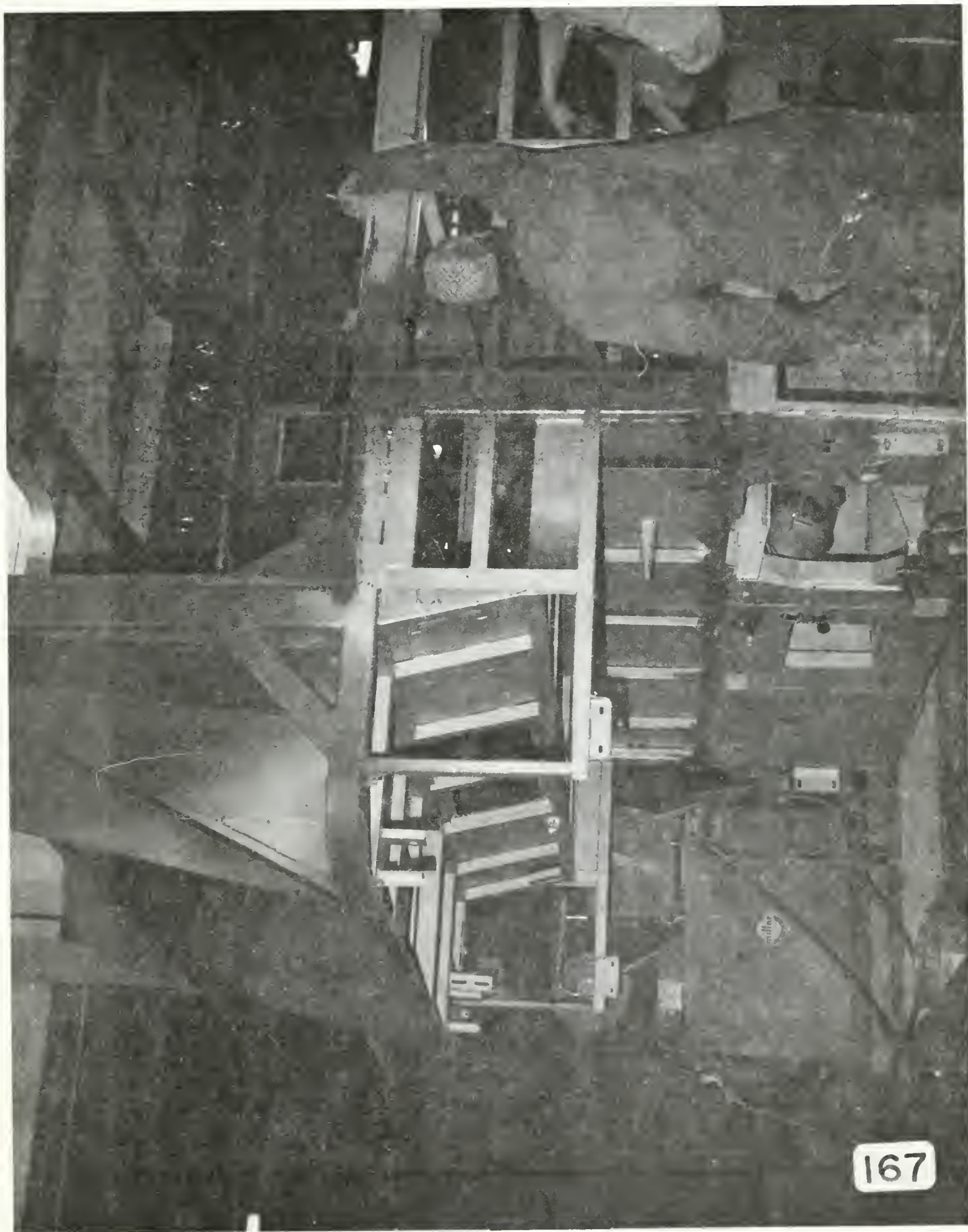


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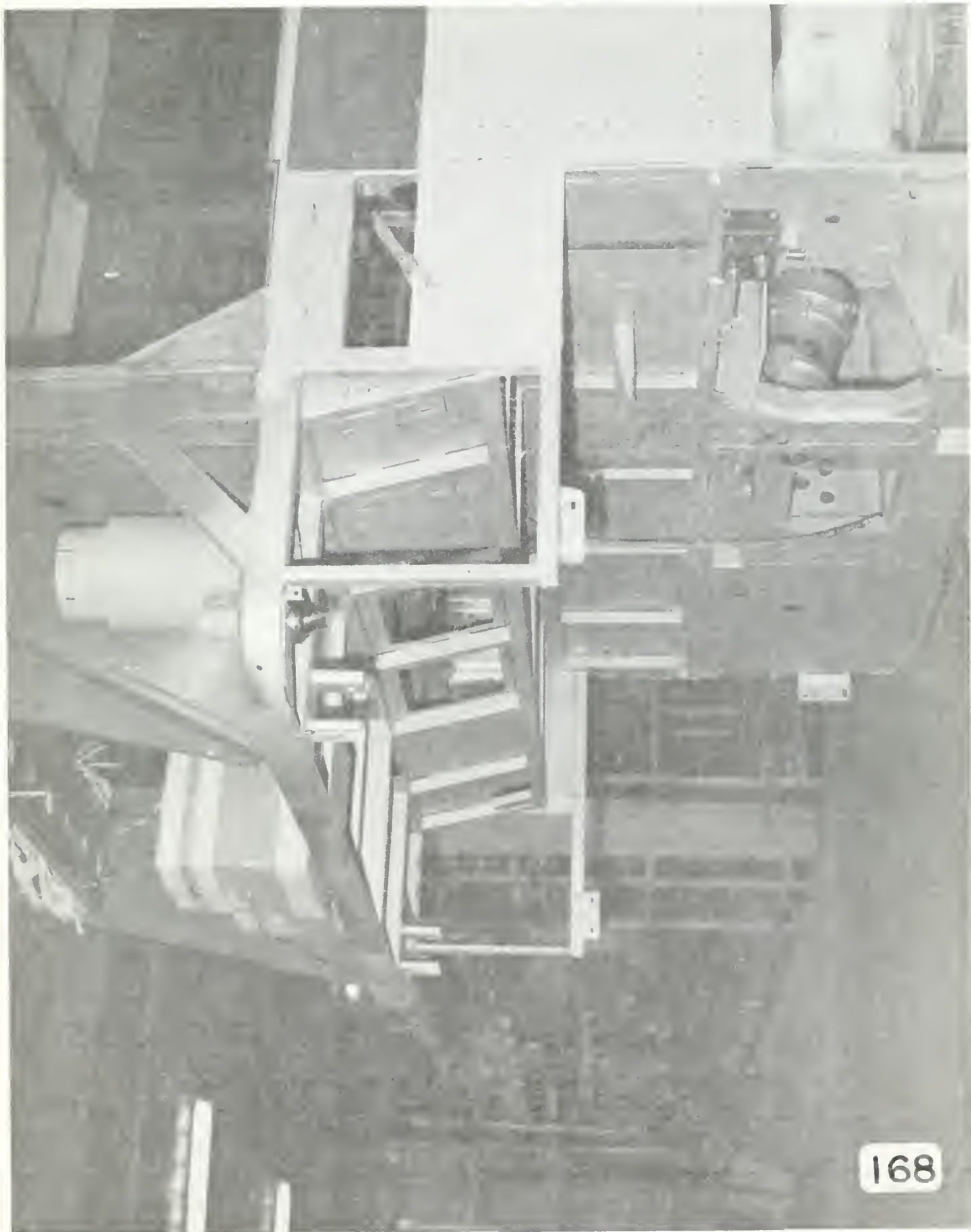


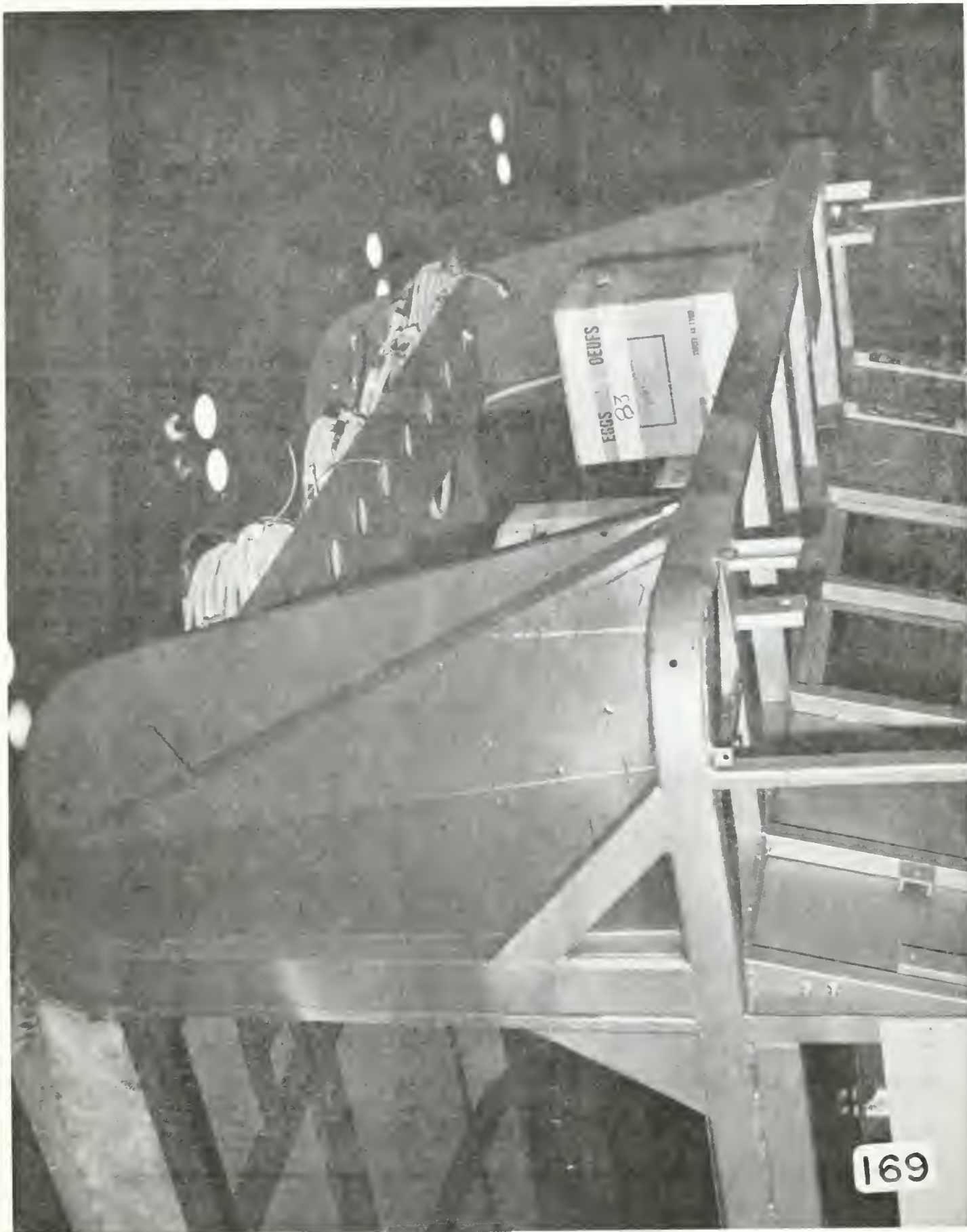


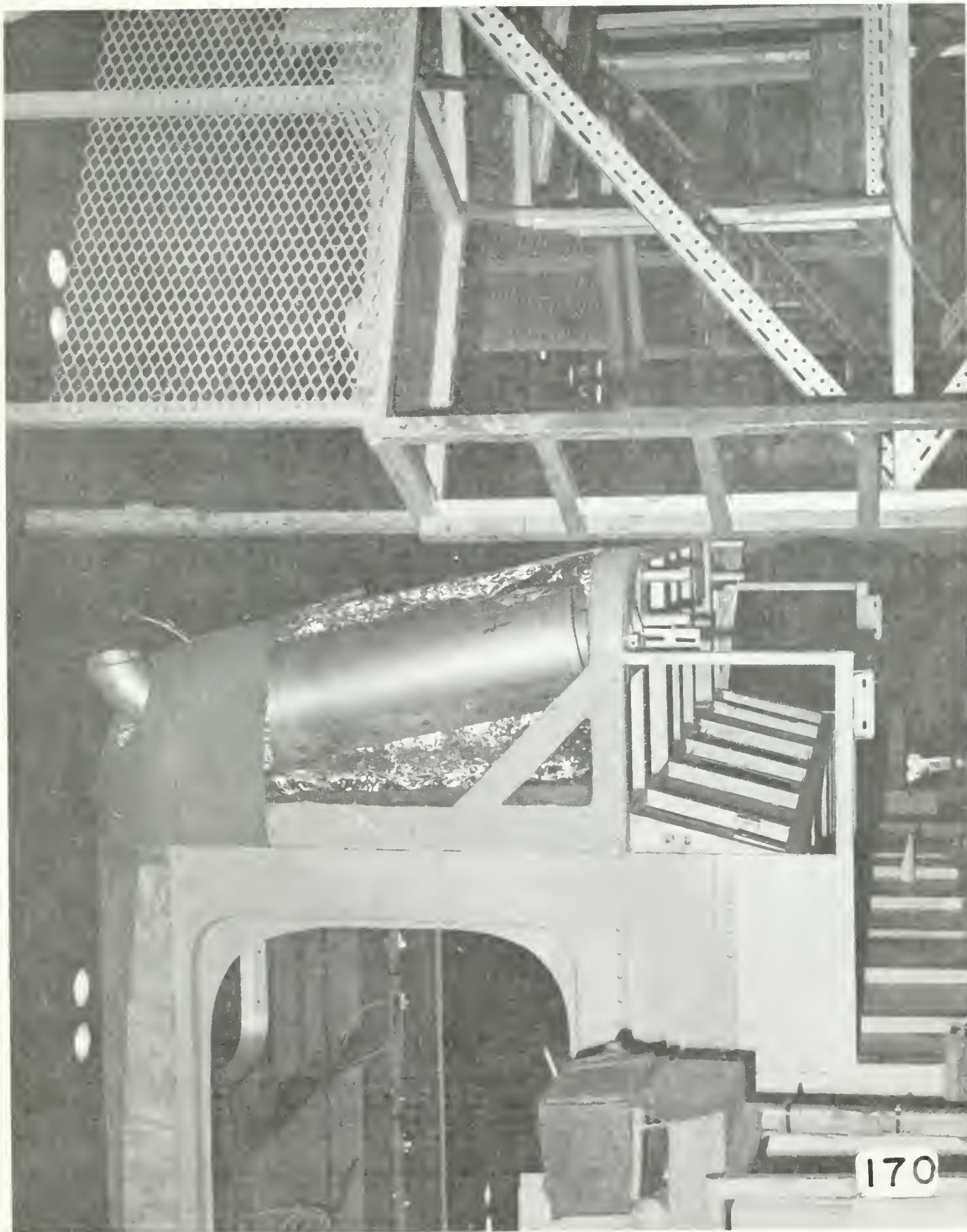


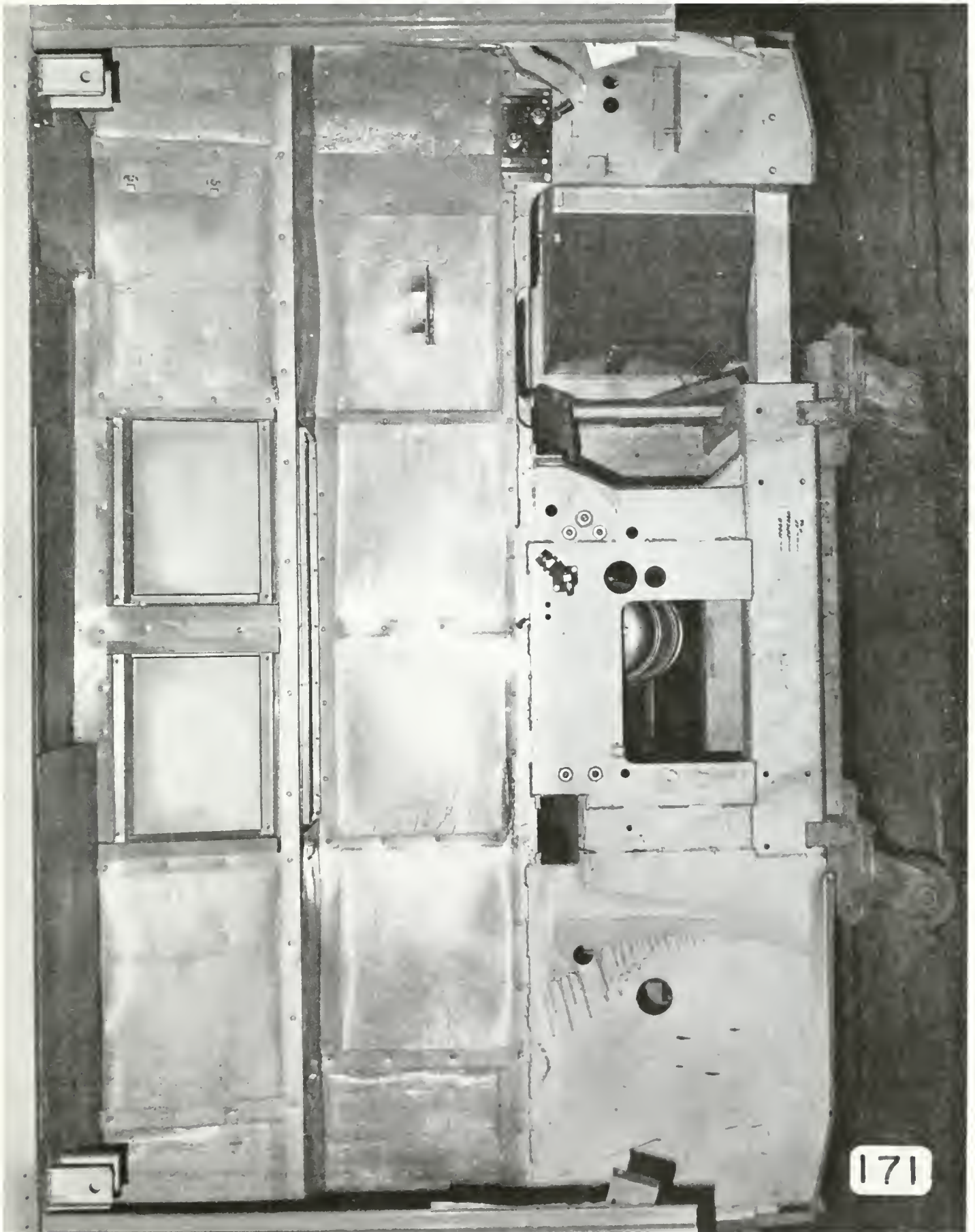


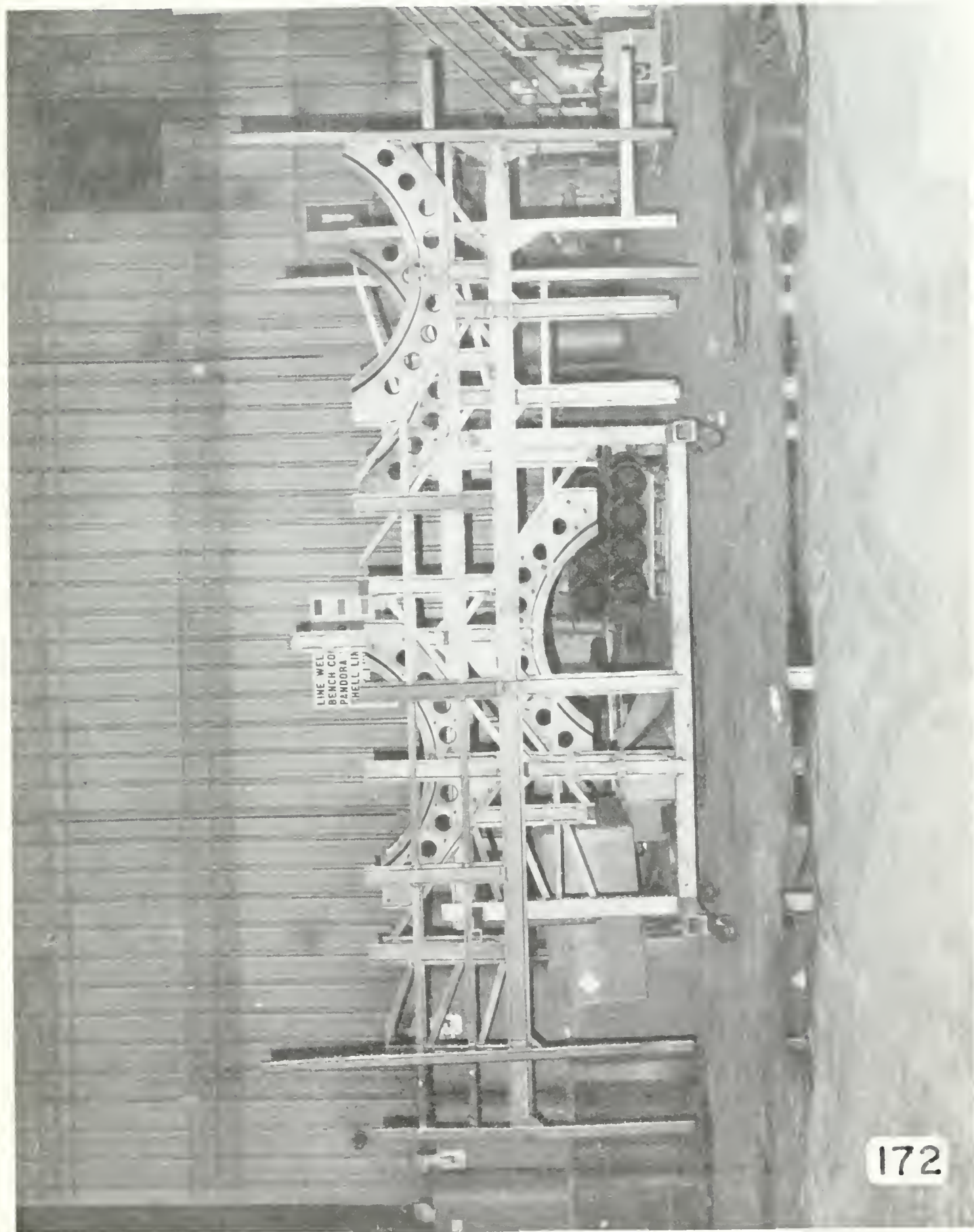
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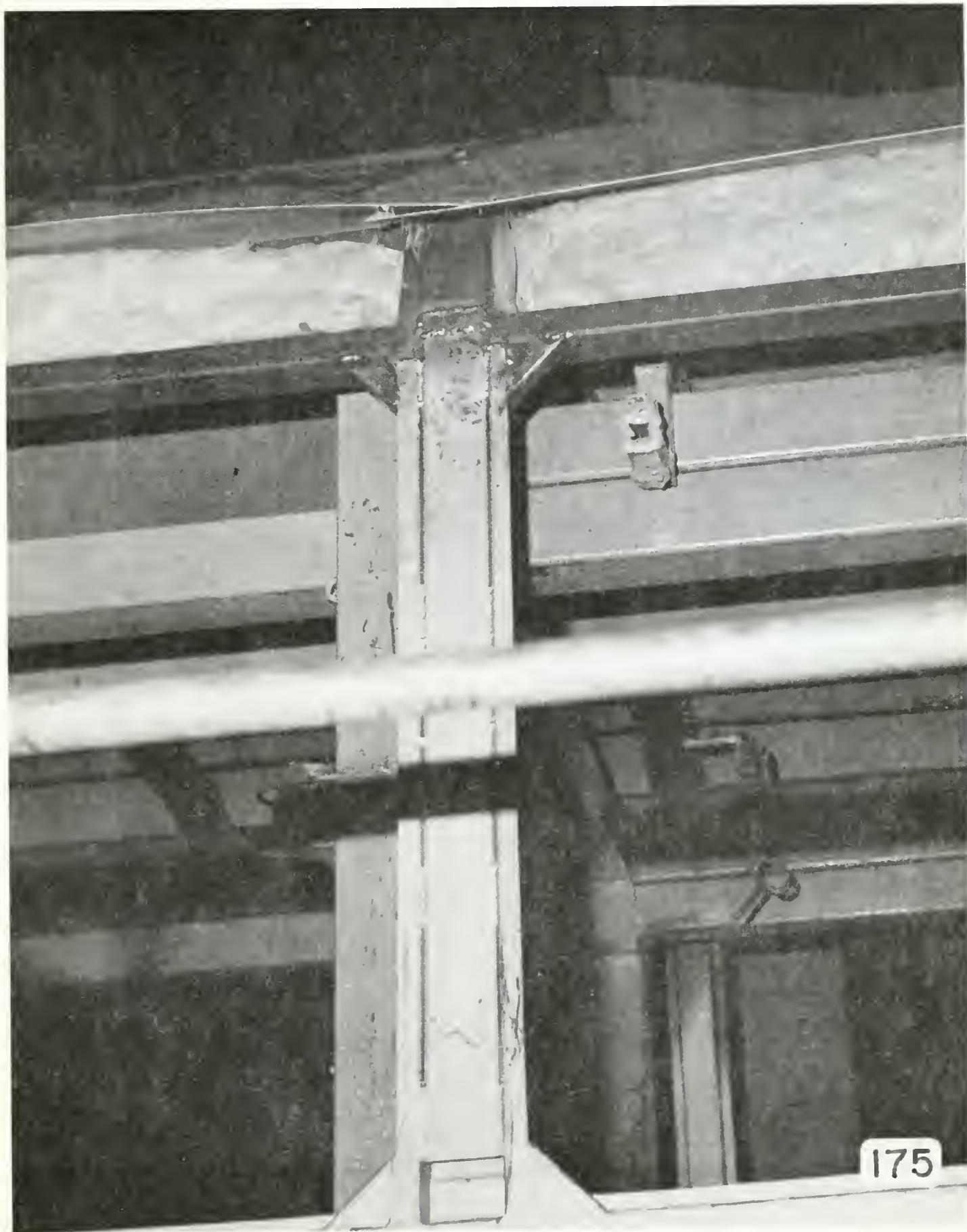




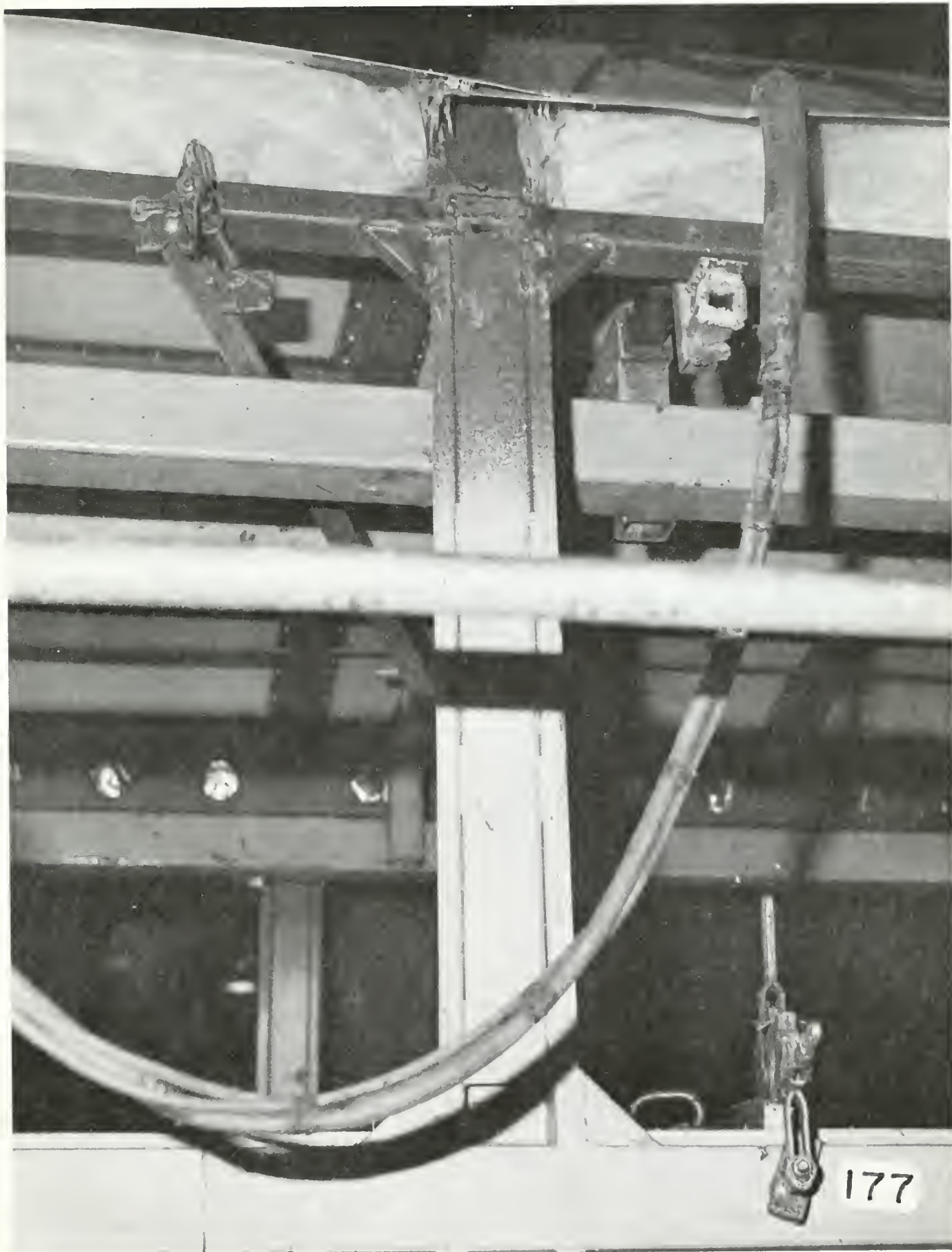




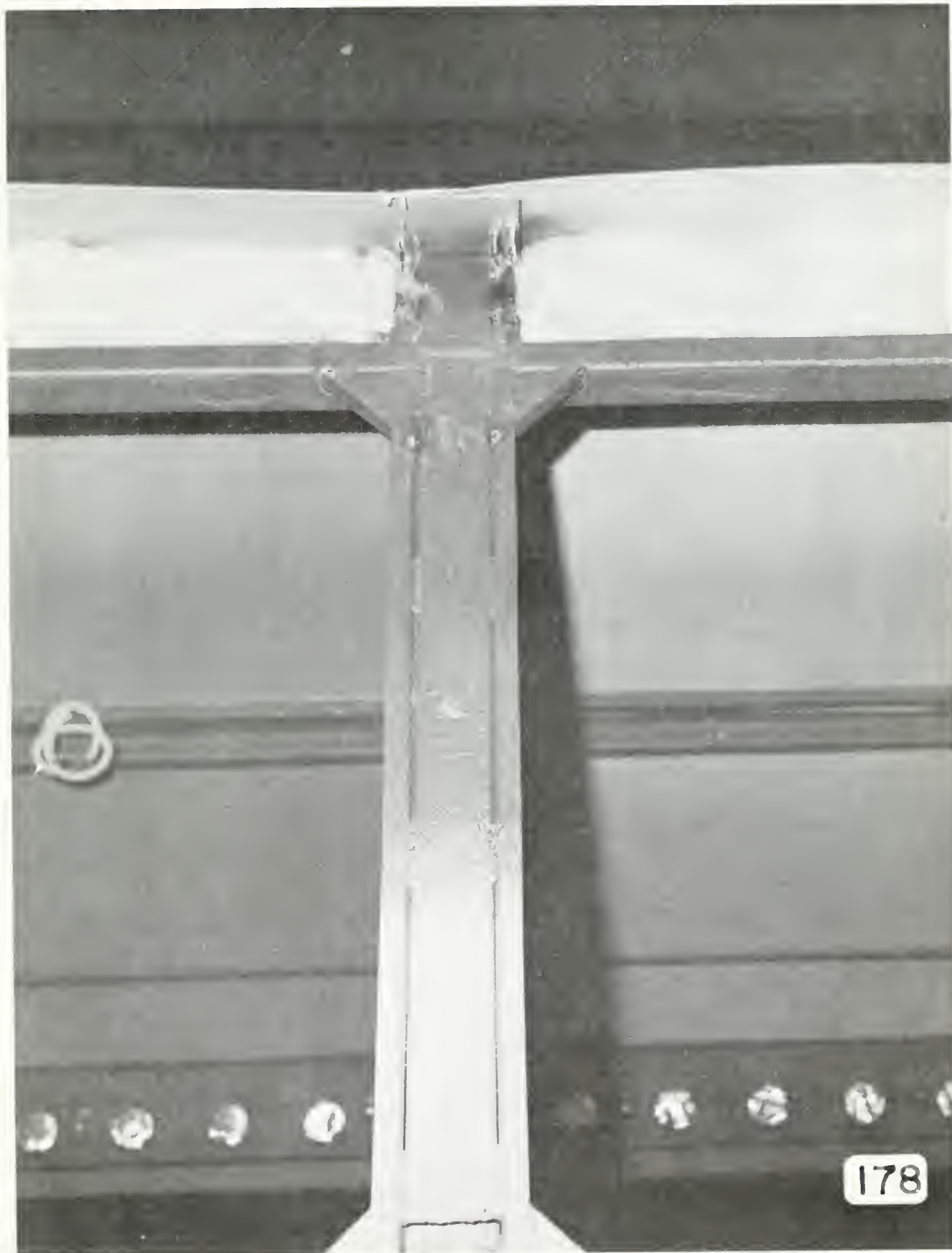


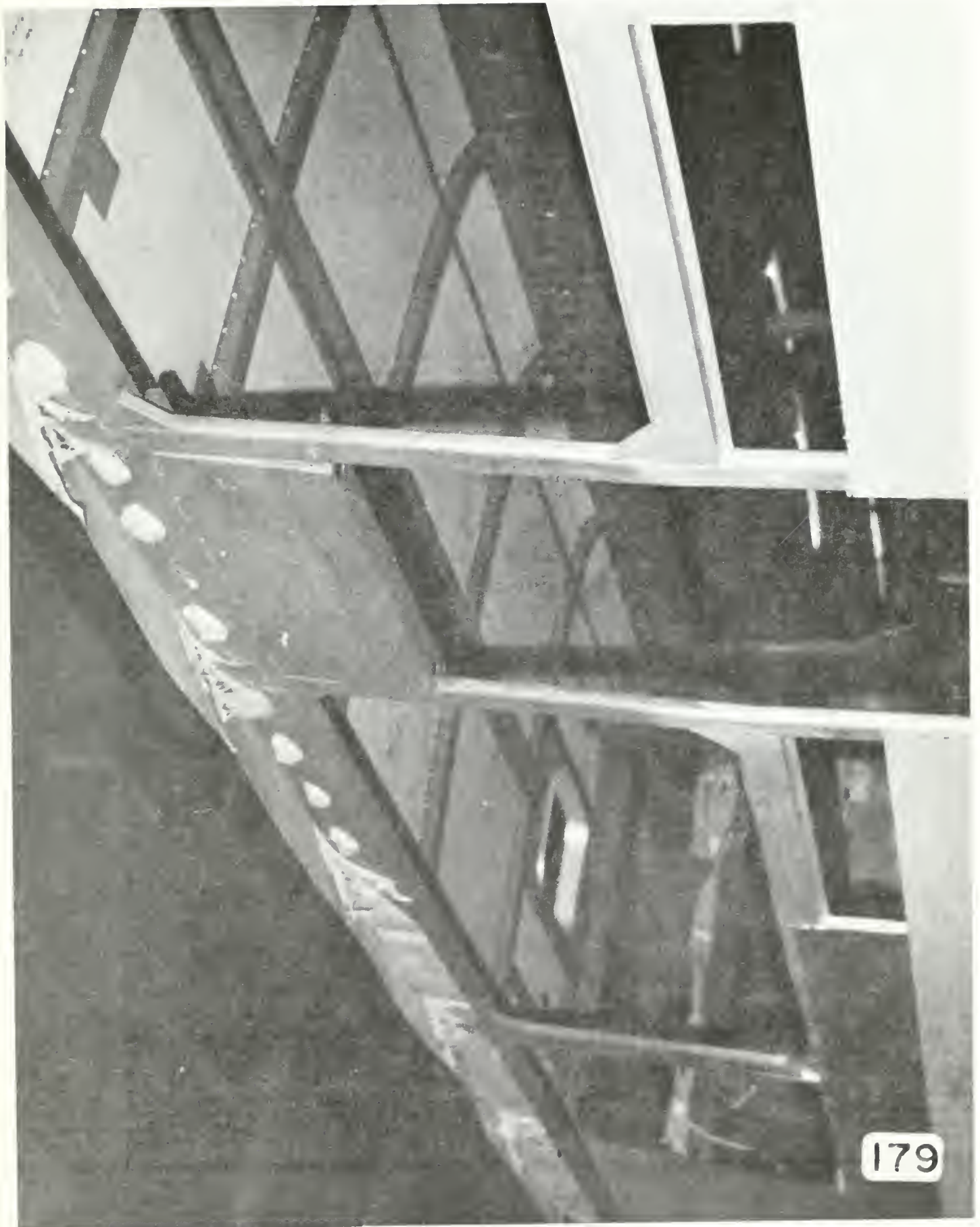


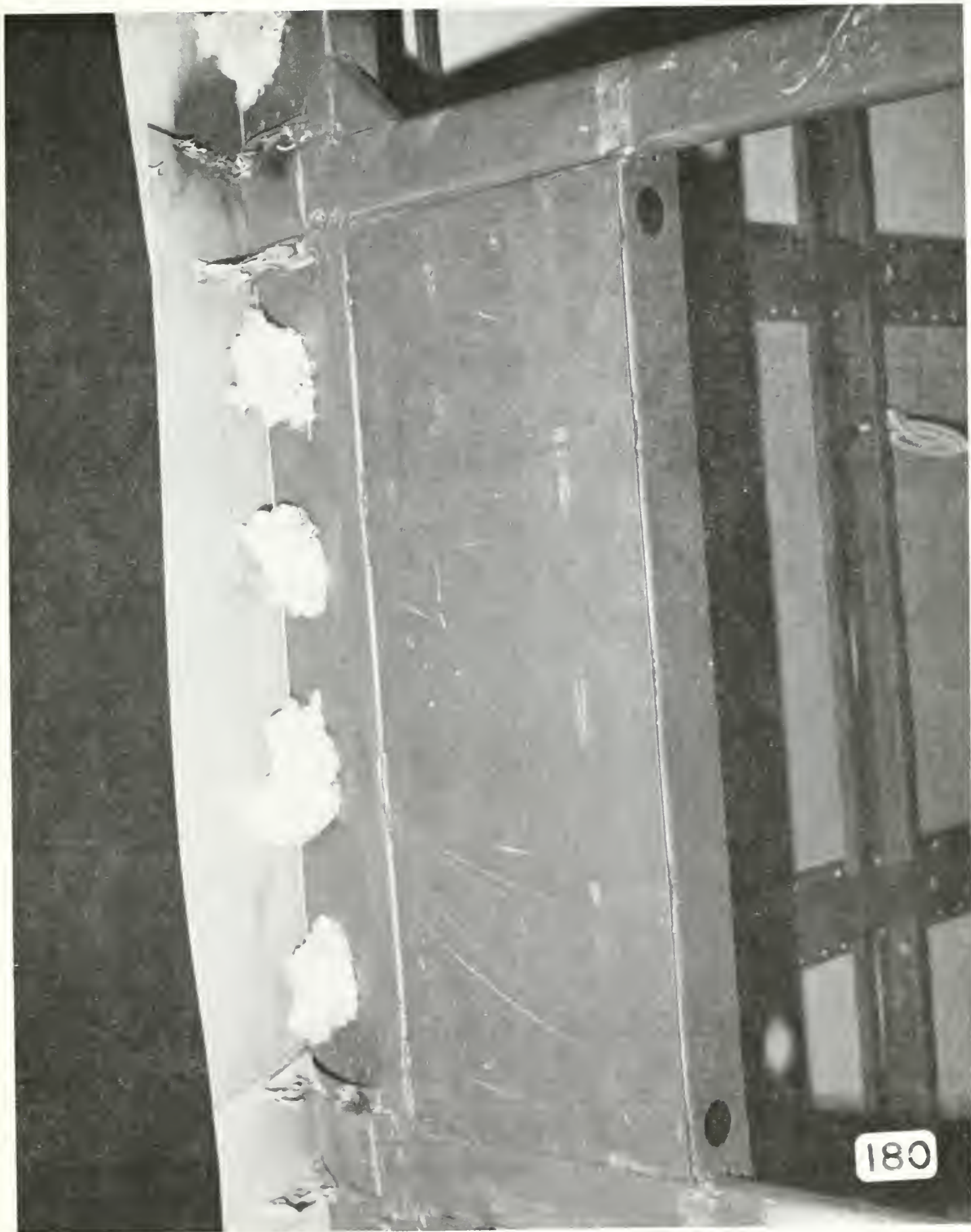


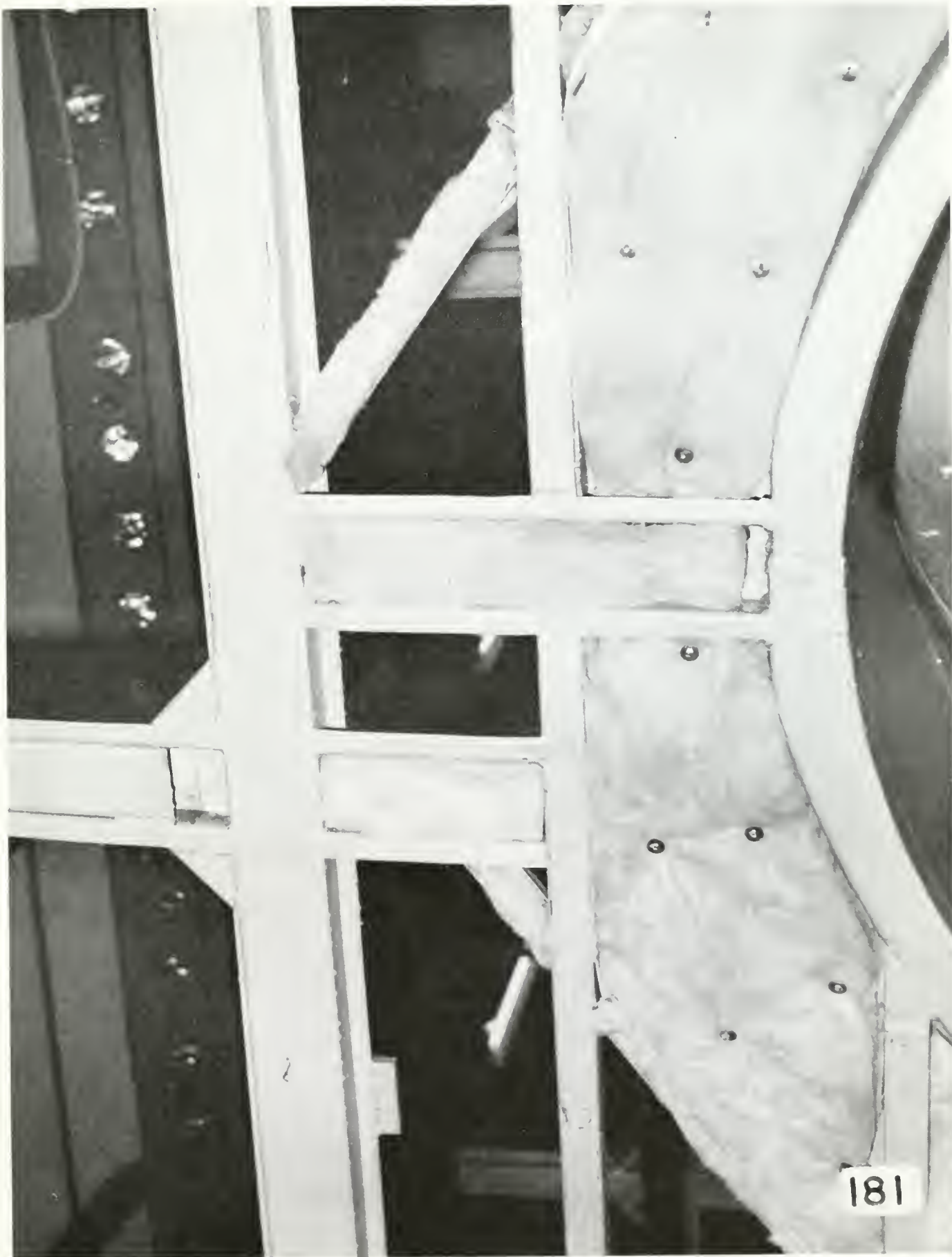


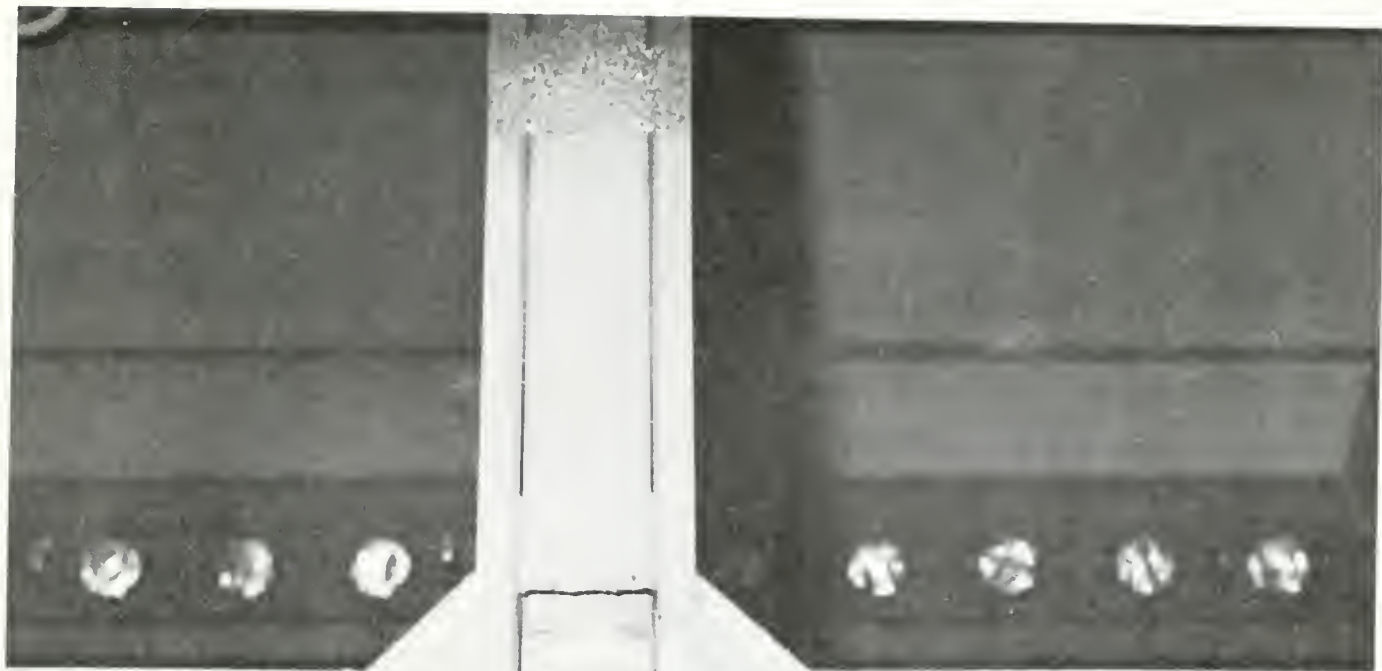
177

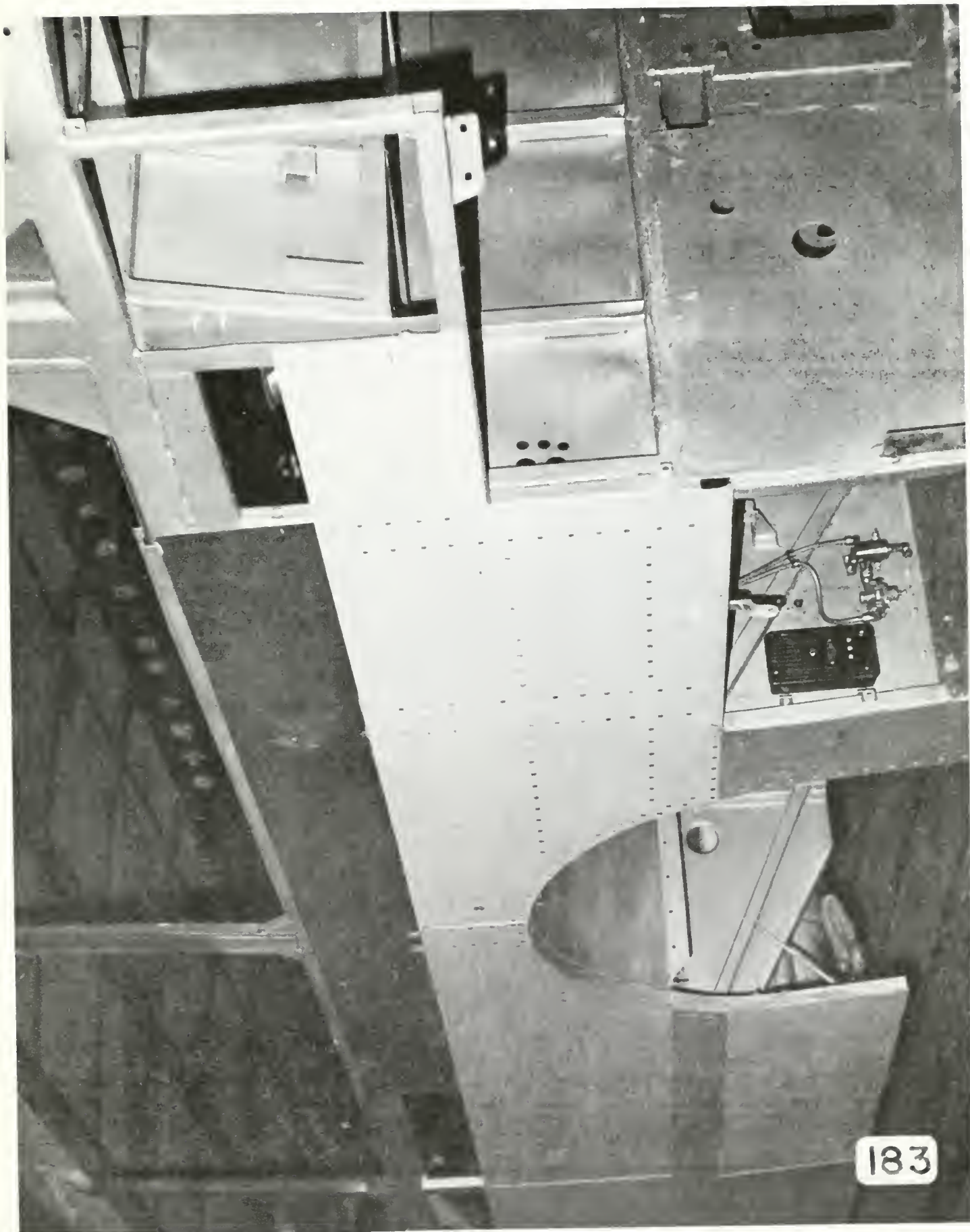


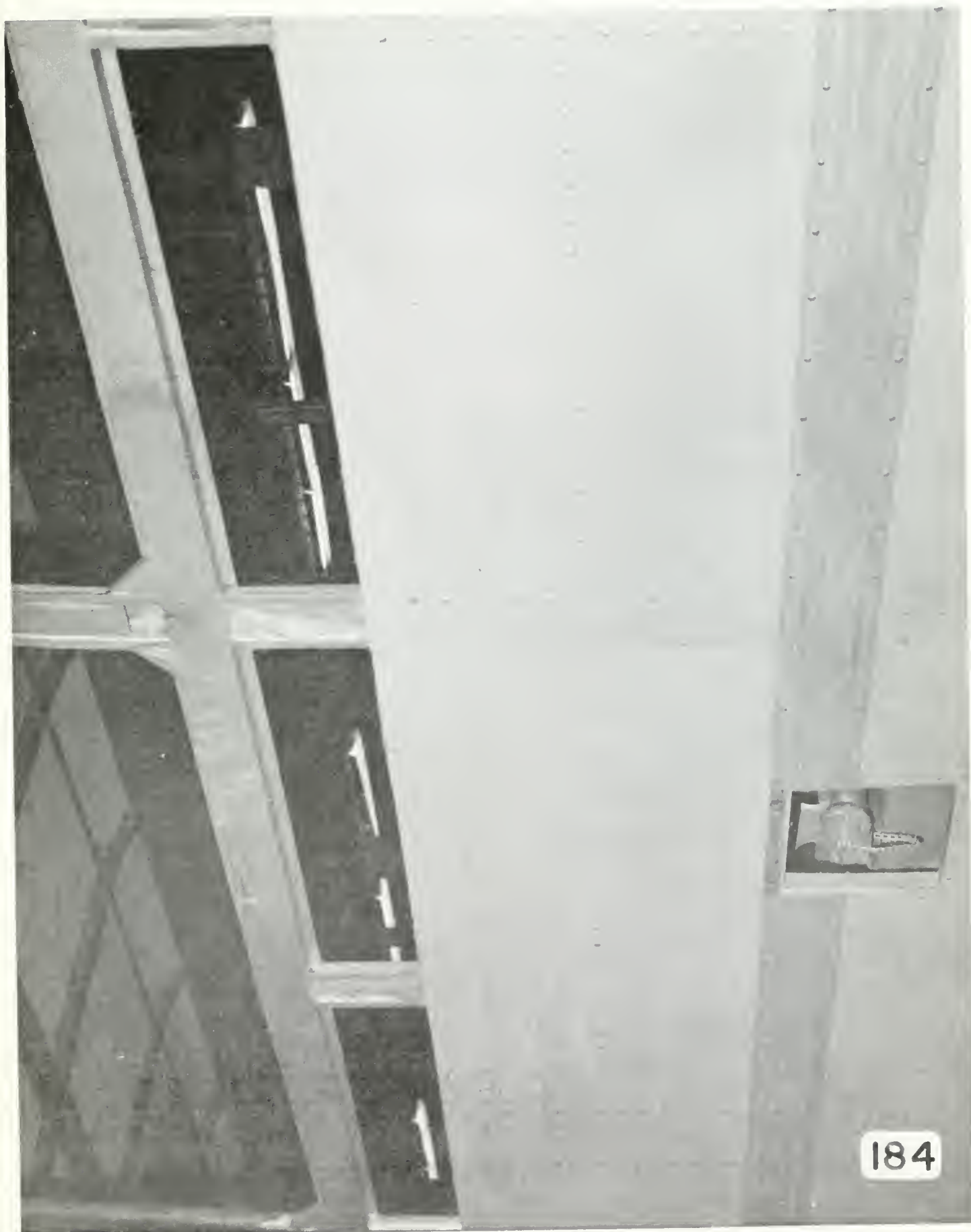


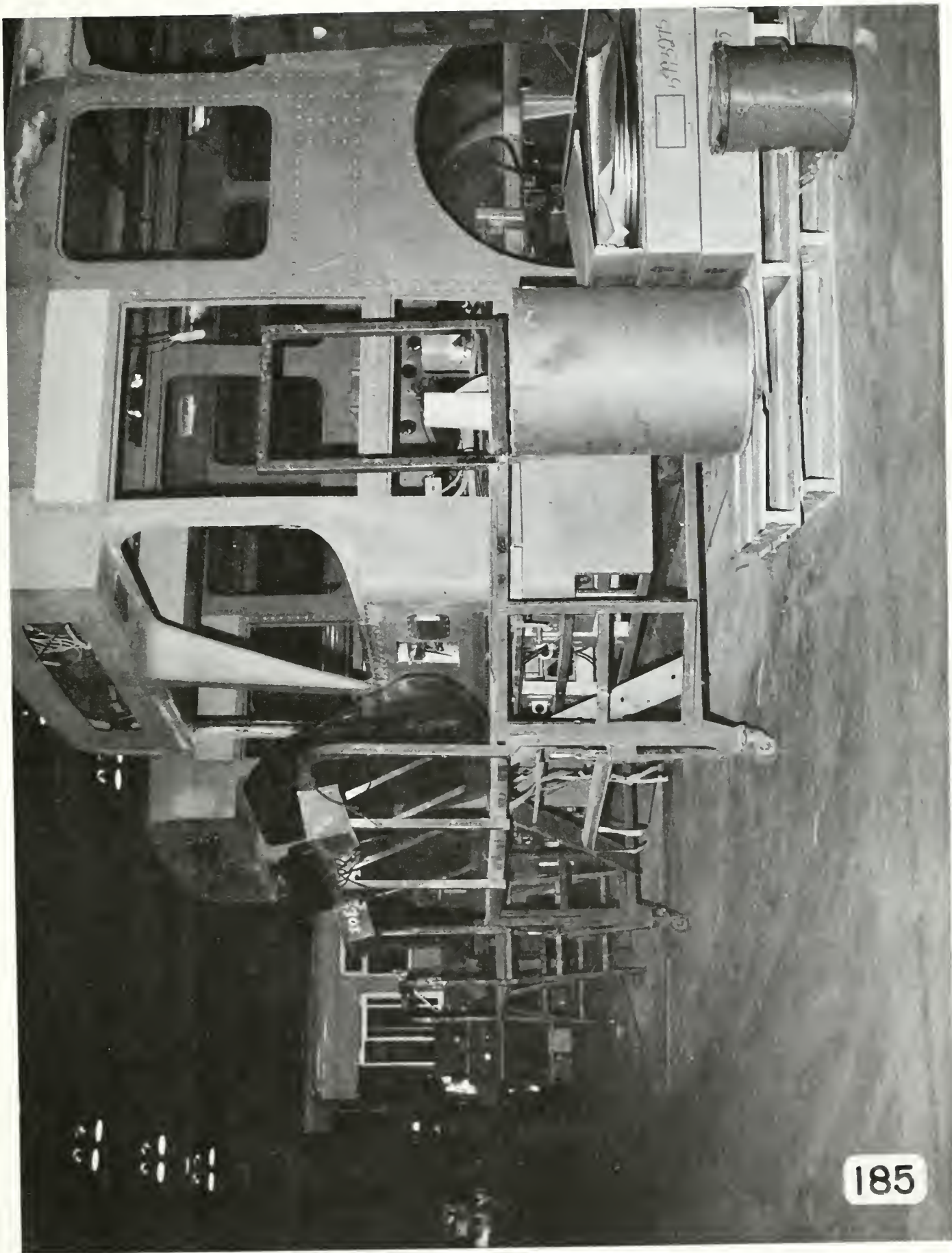




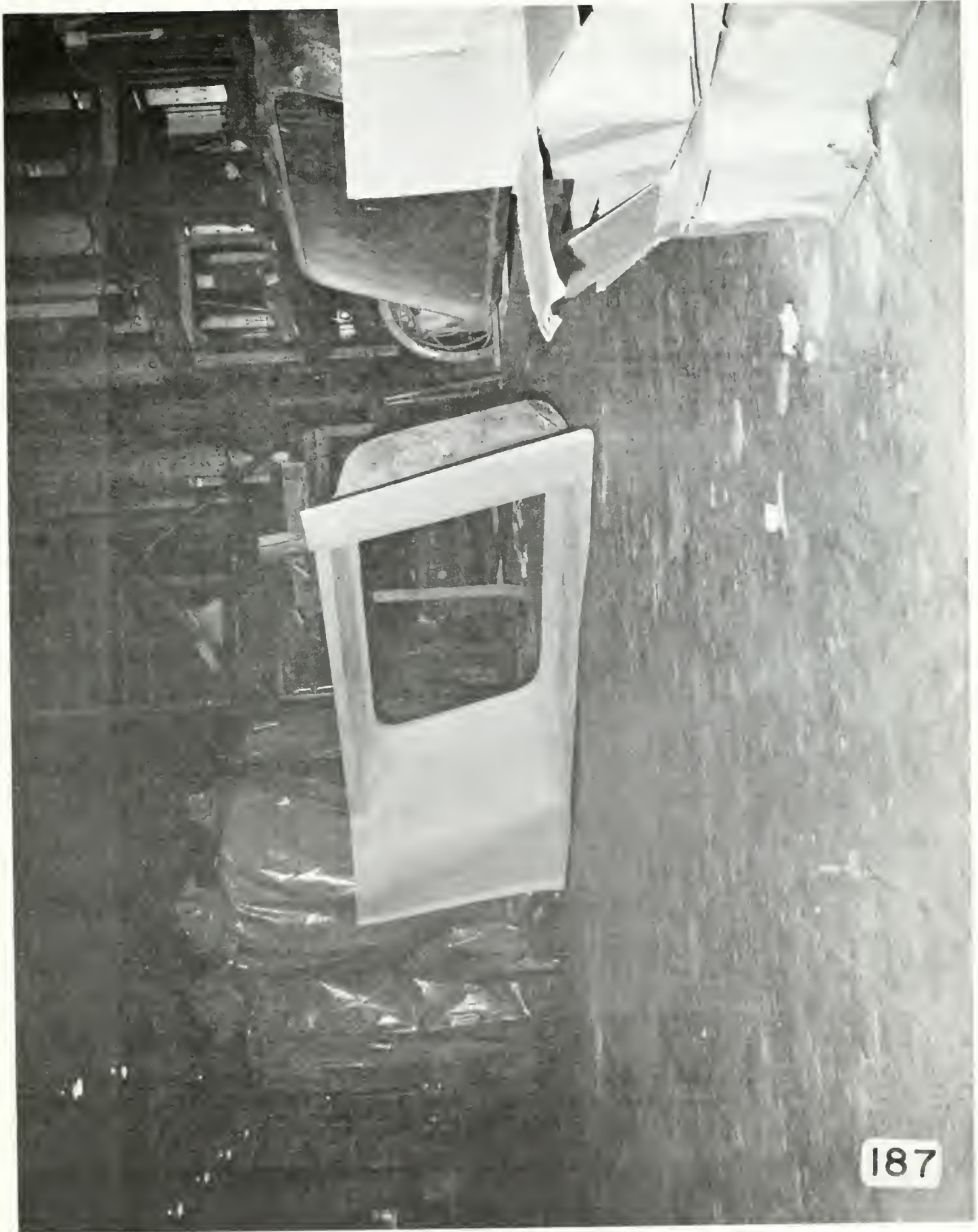


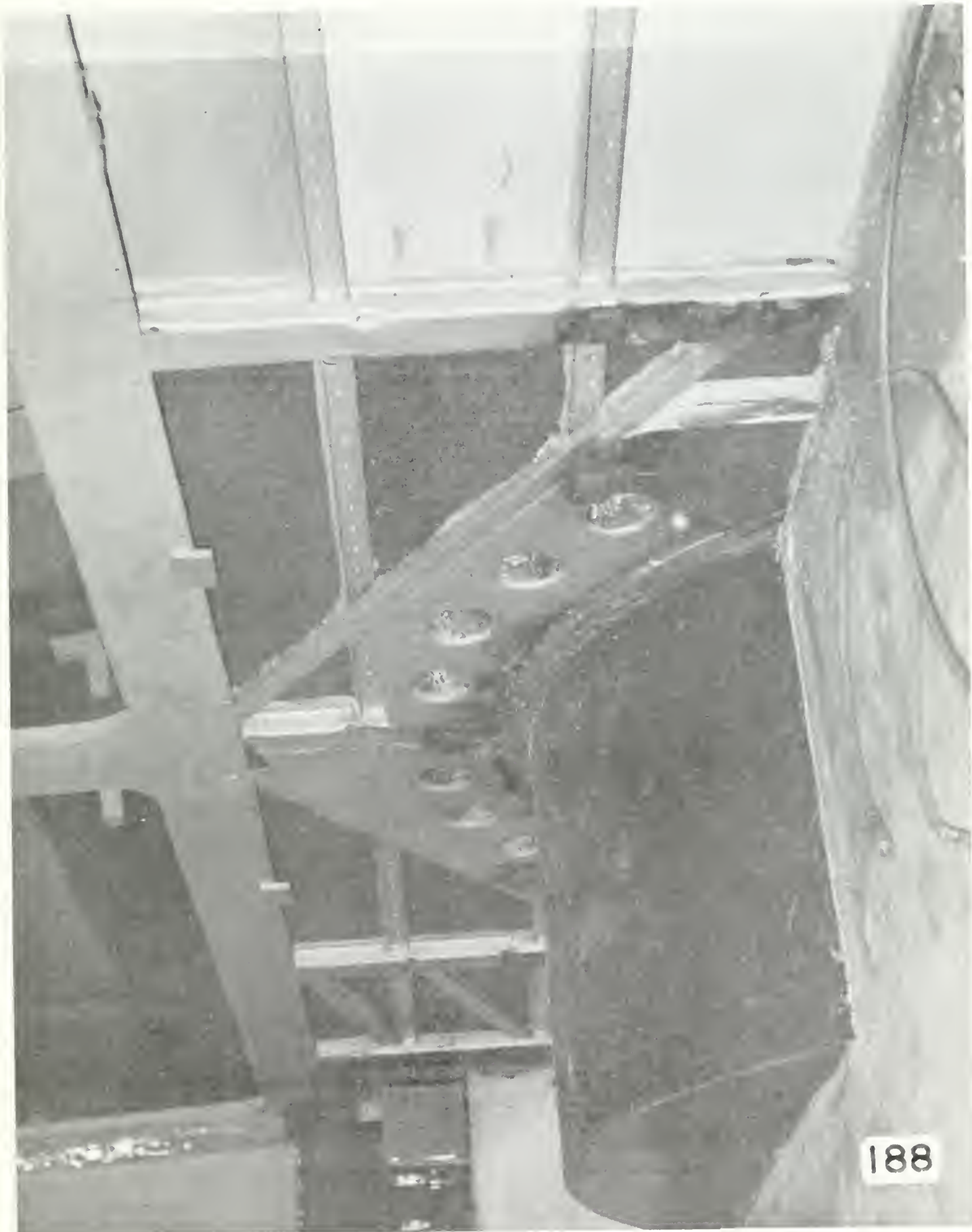


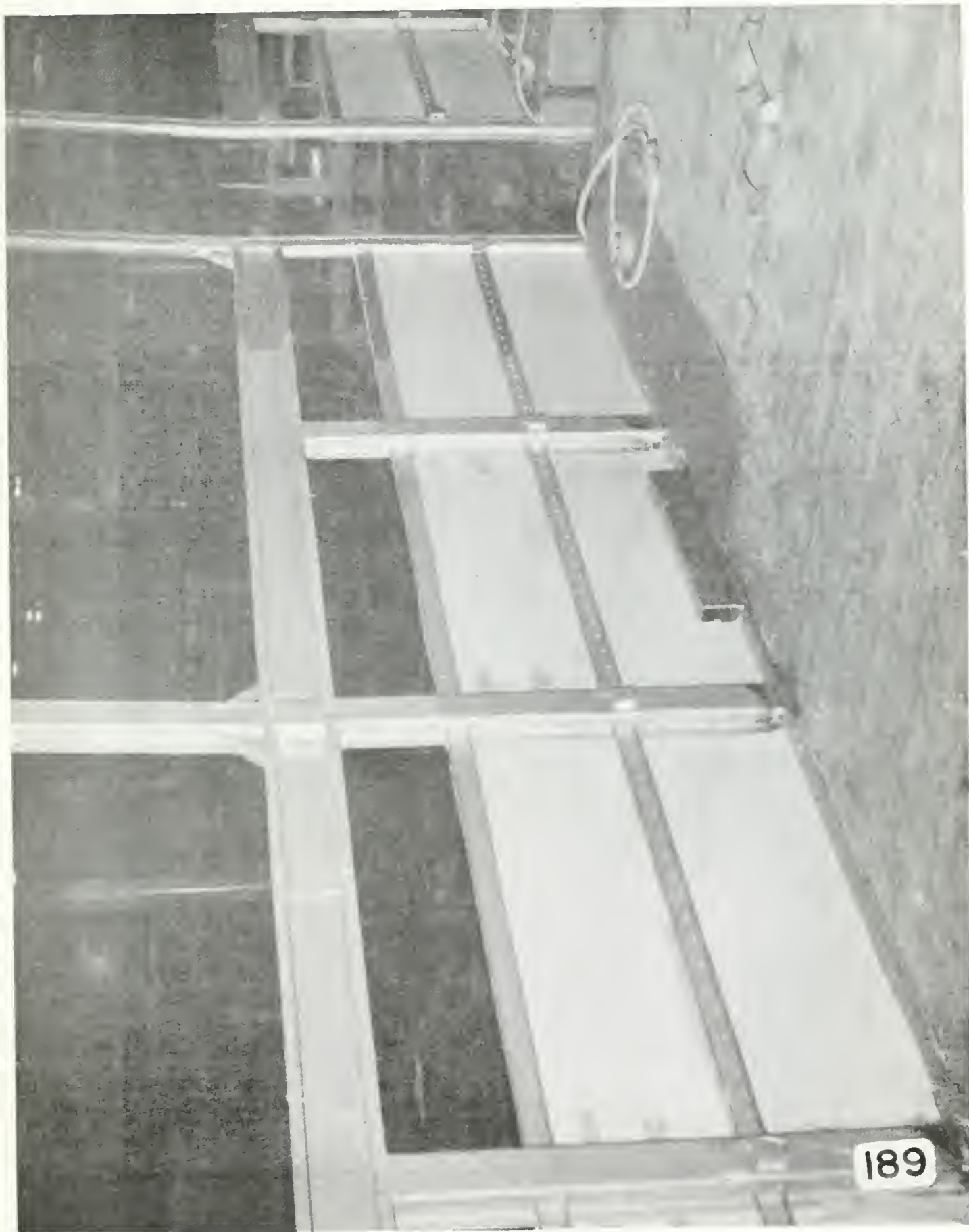


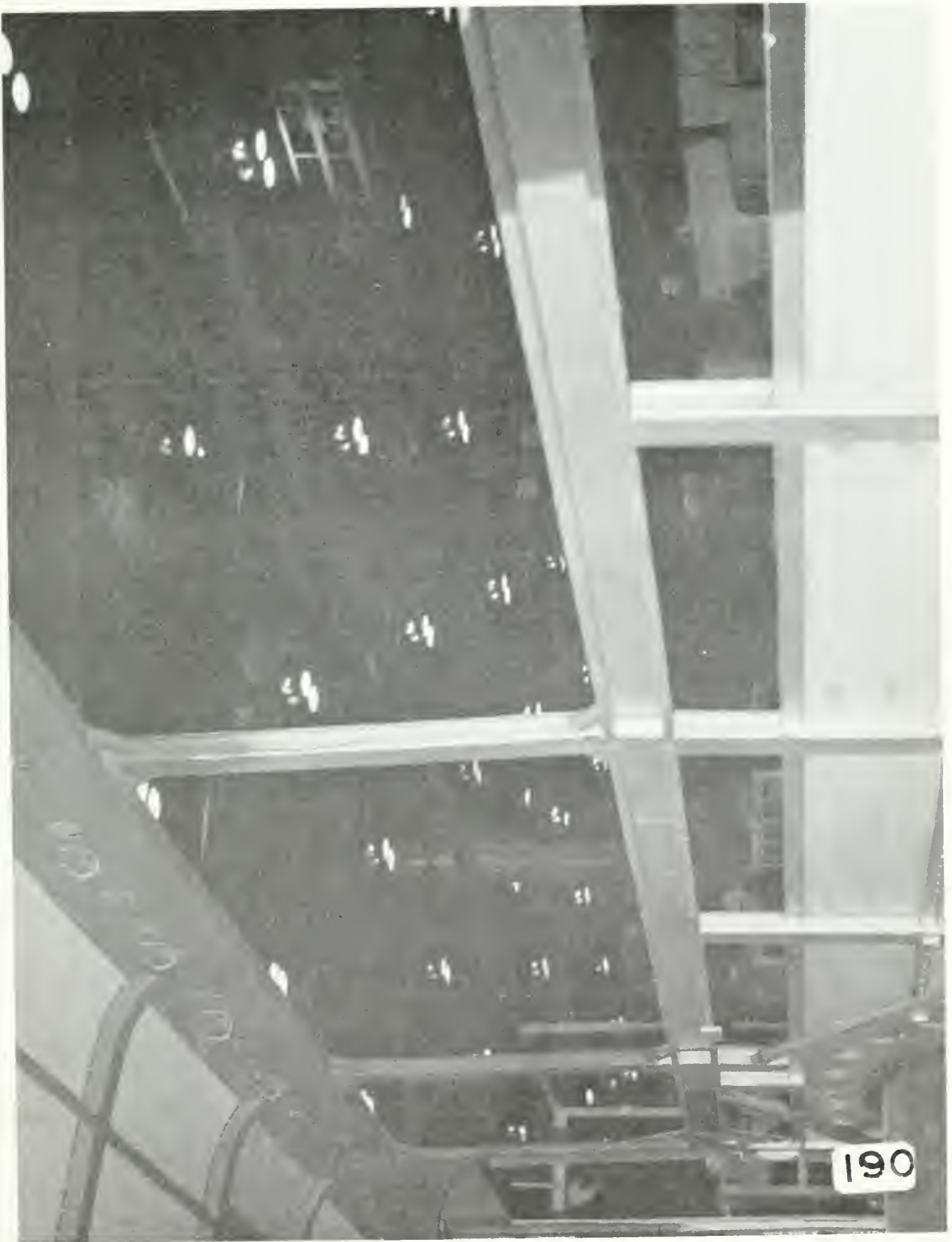


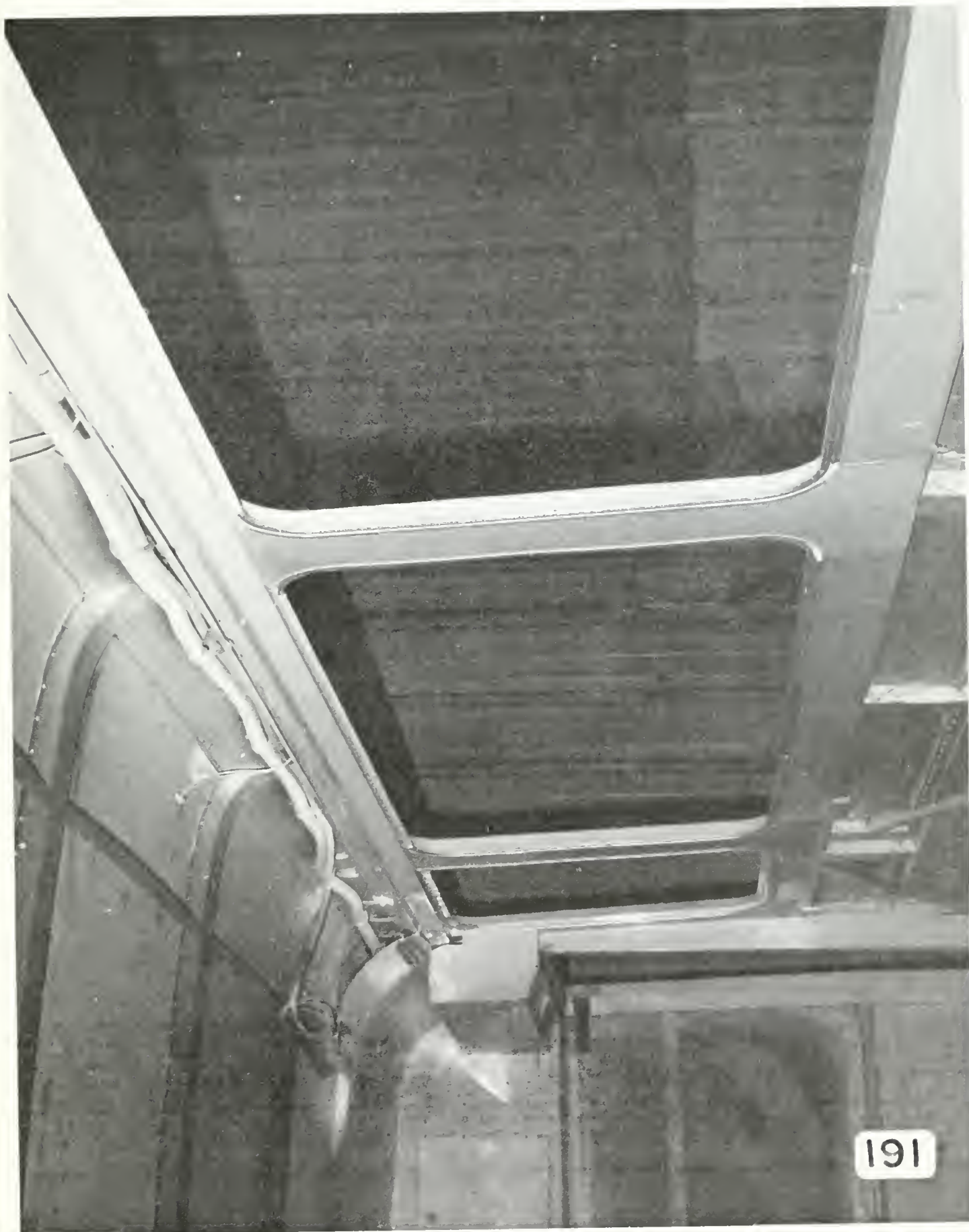


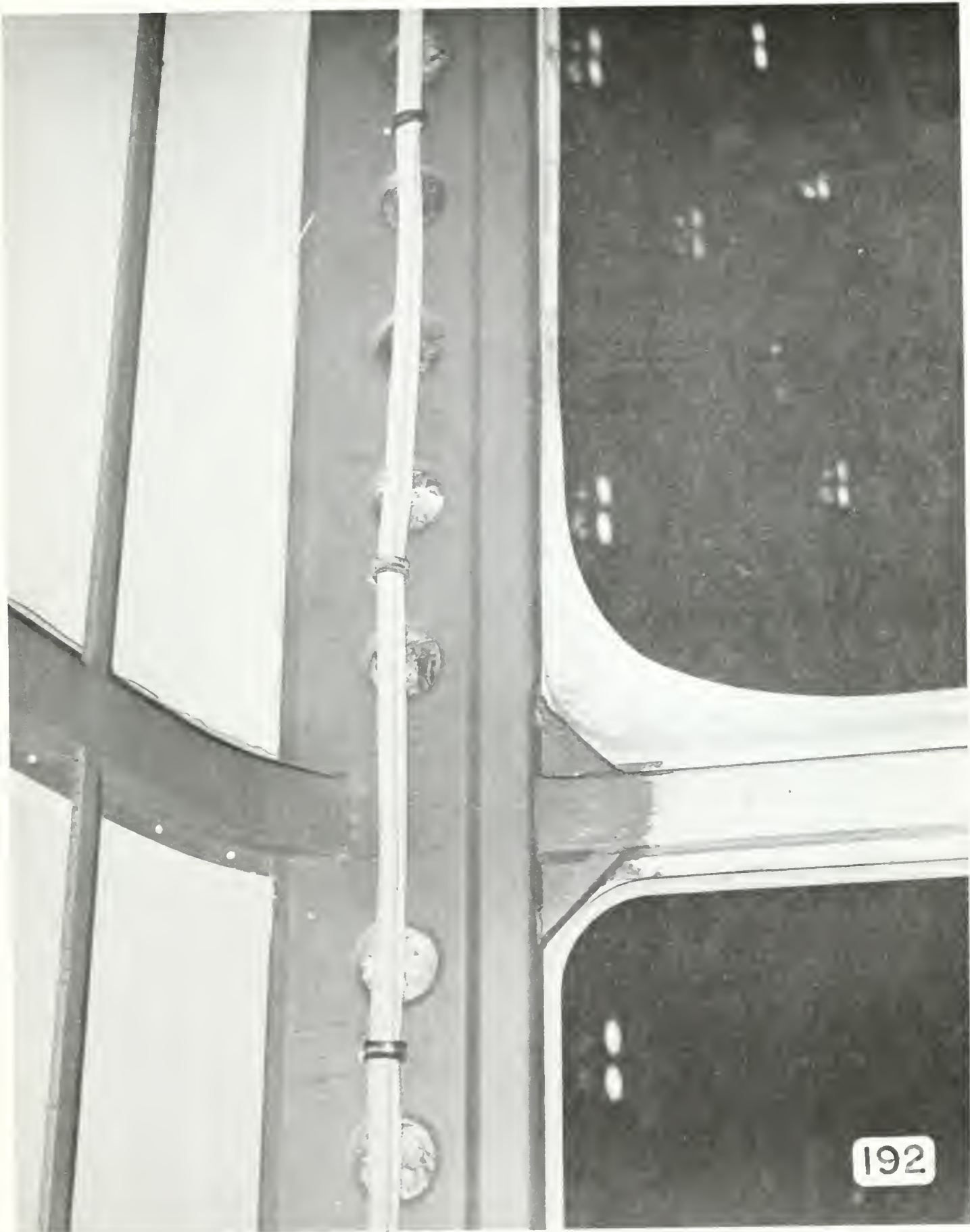




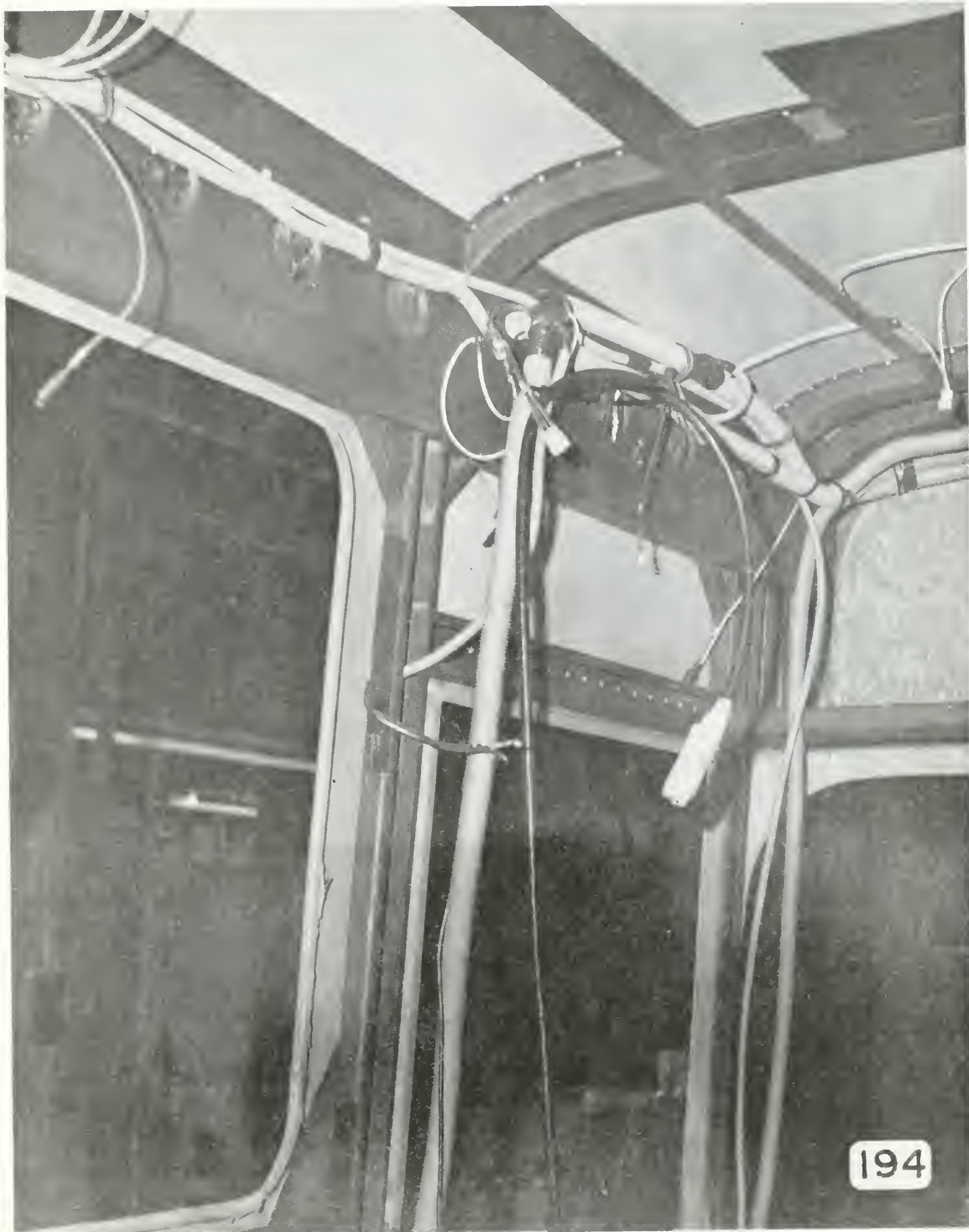


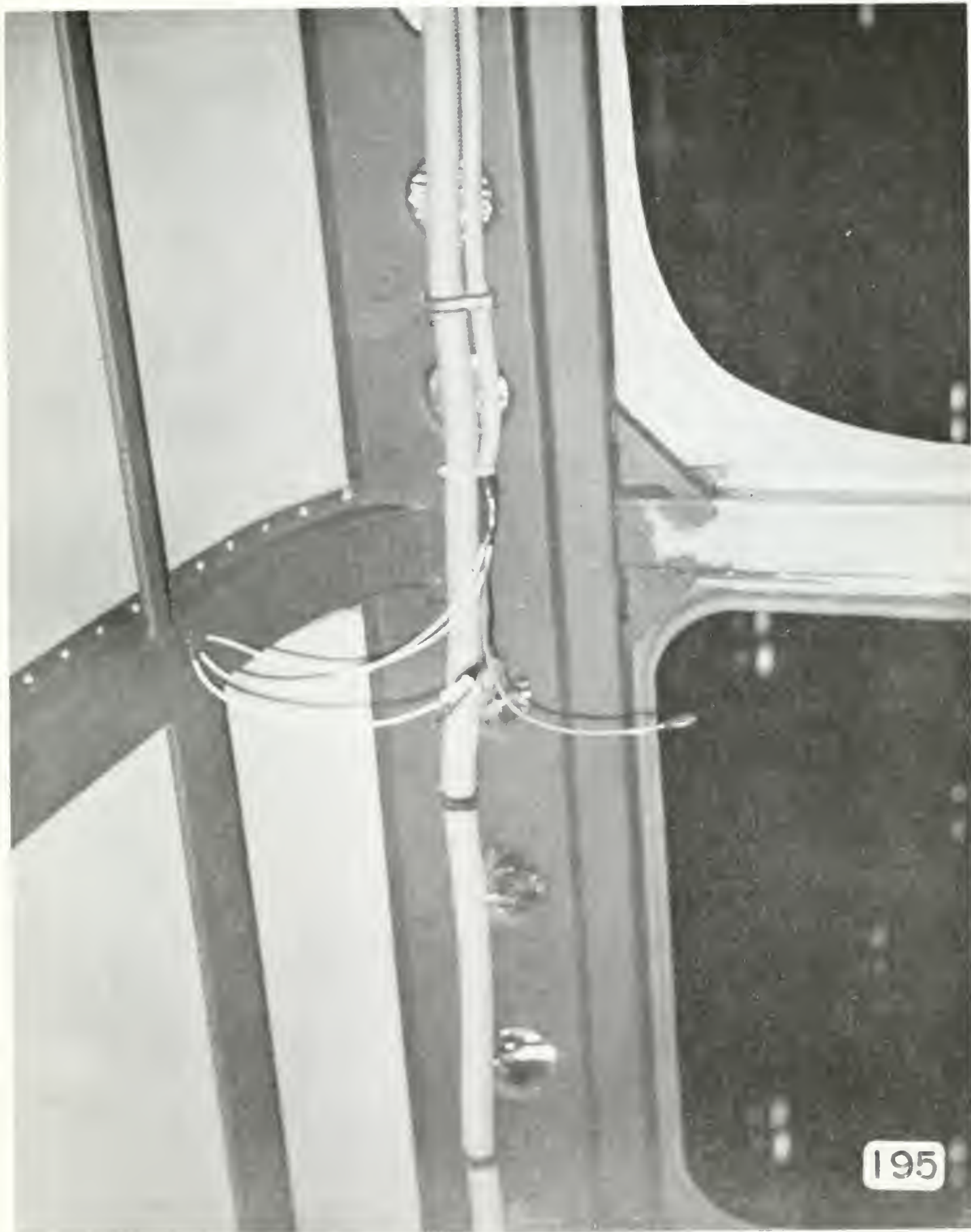


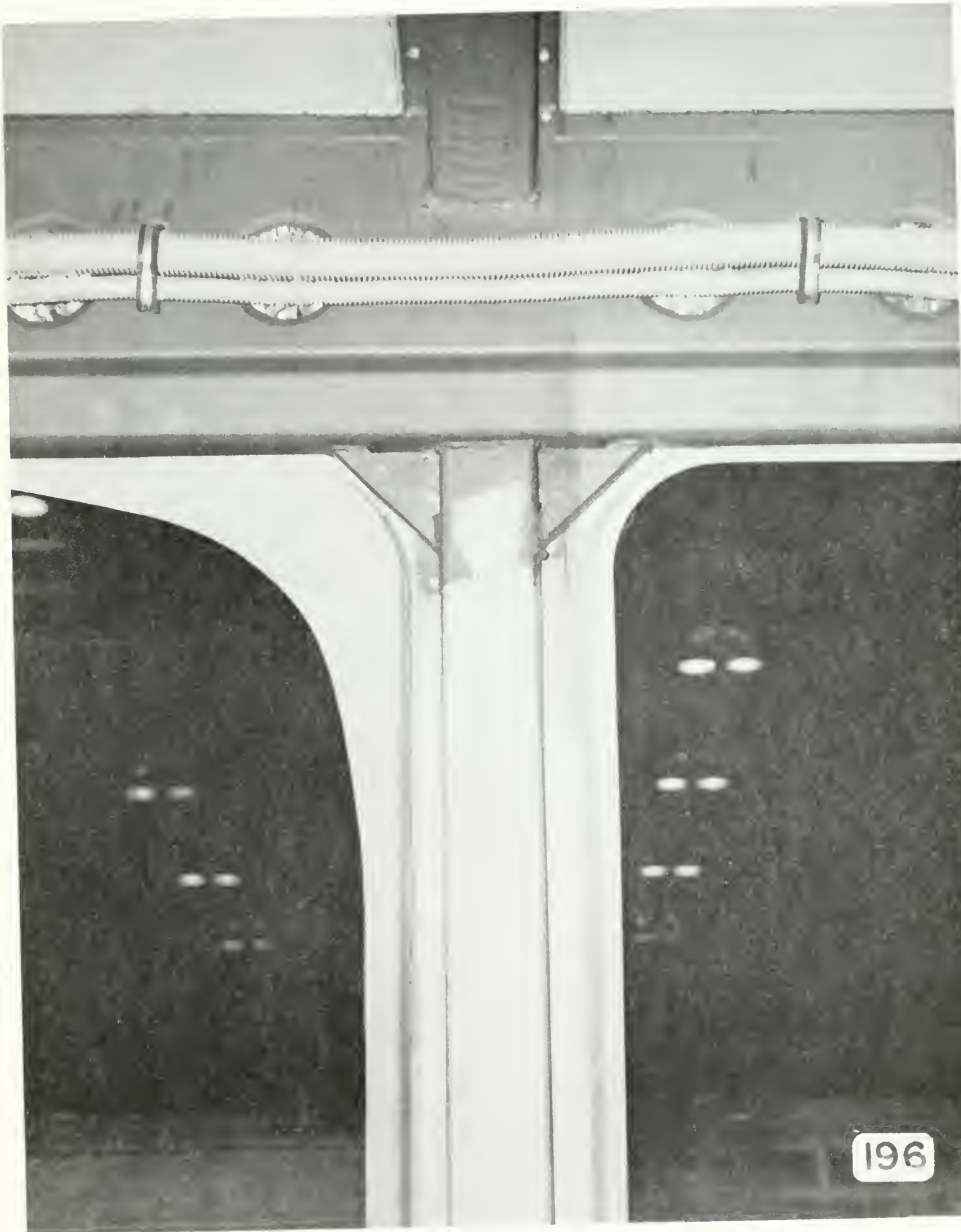


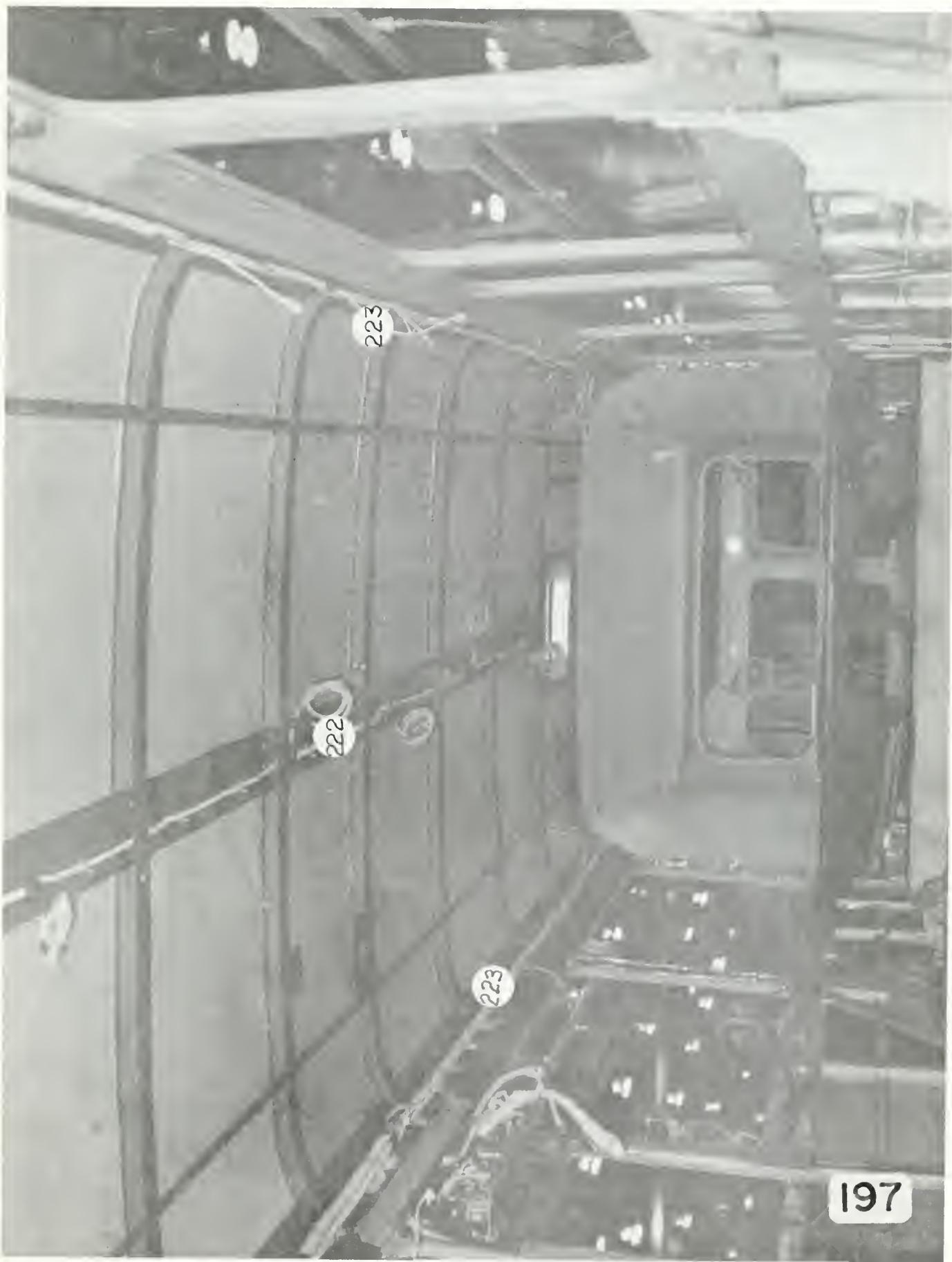


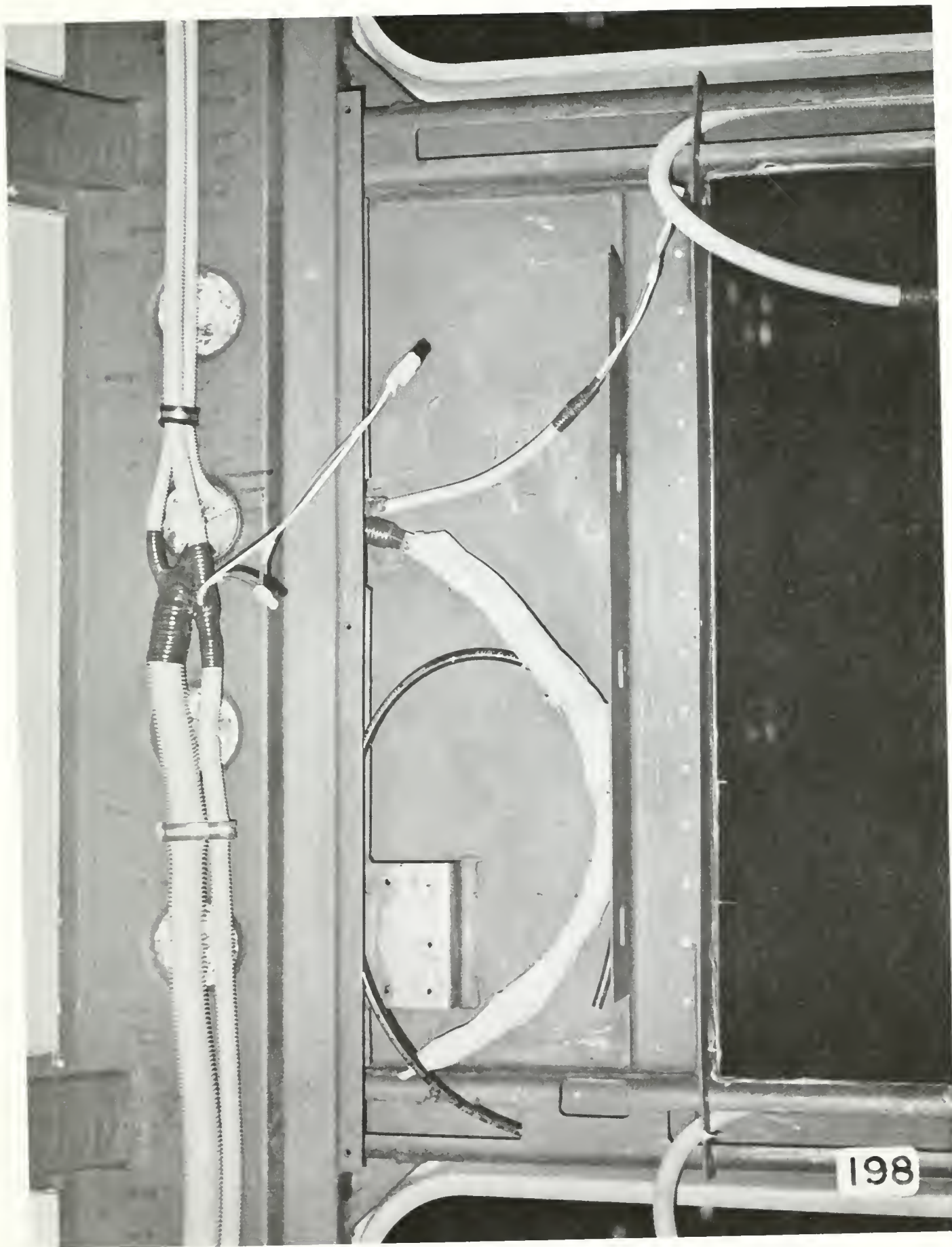


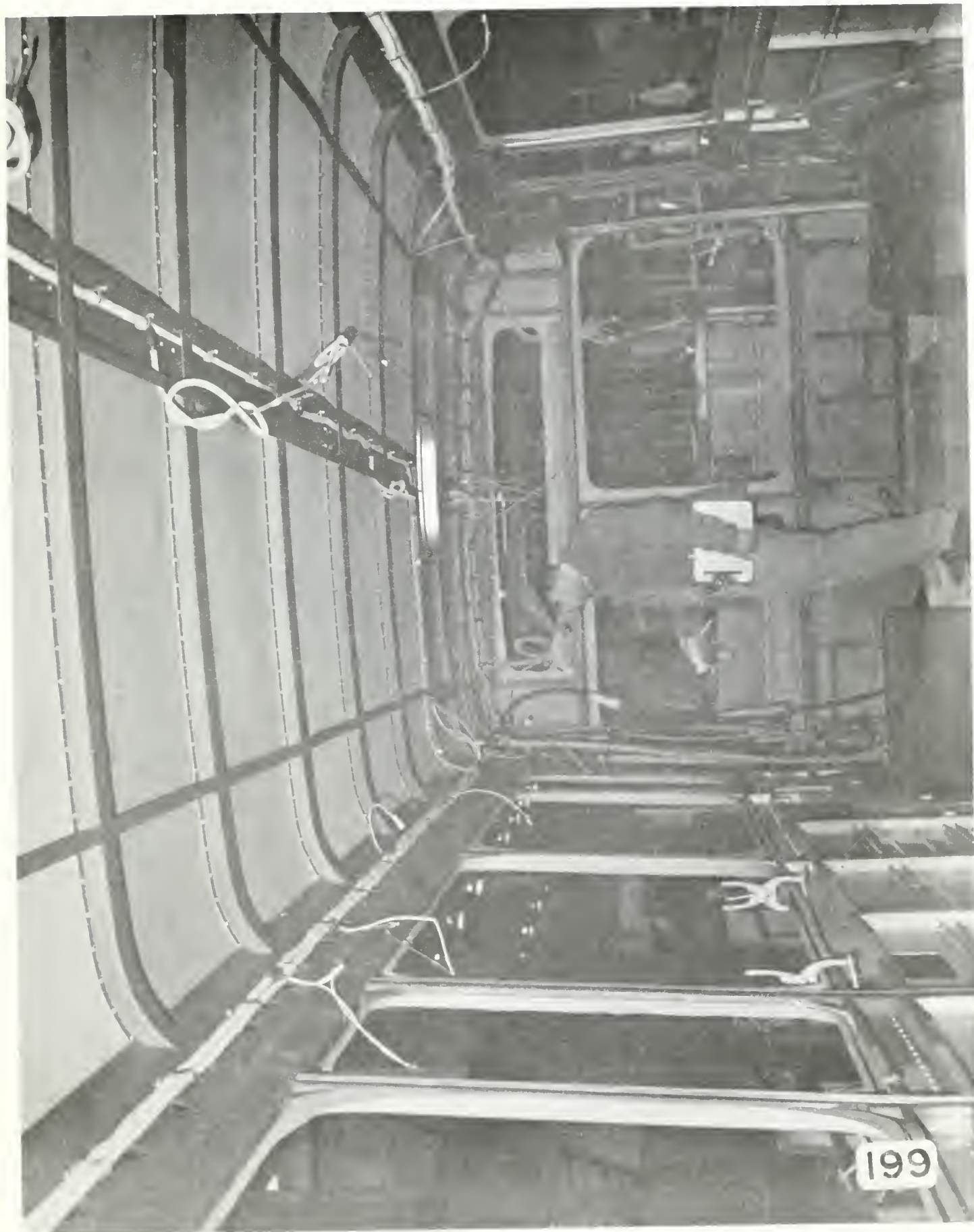


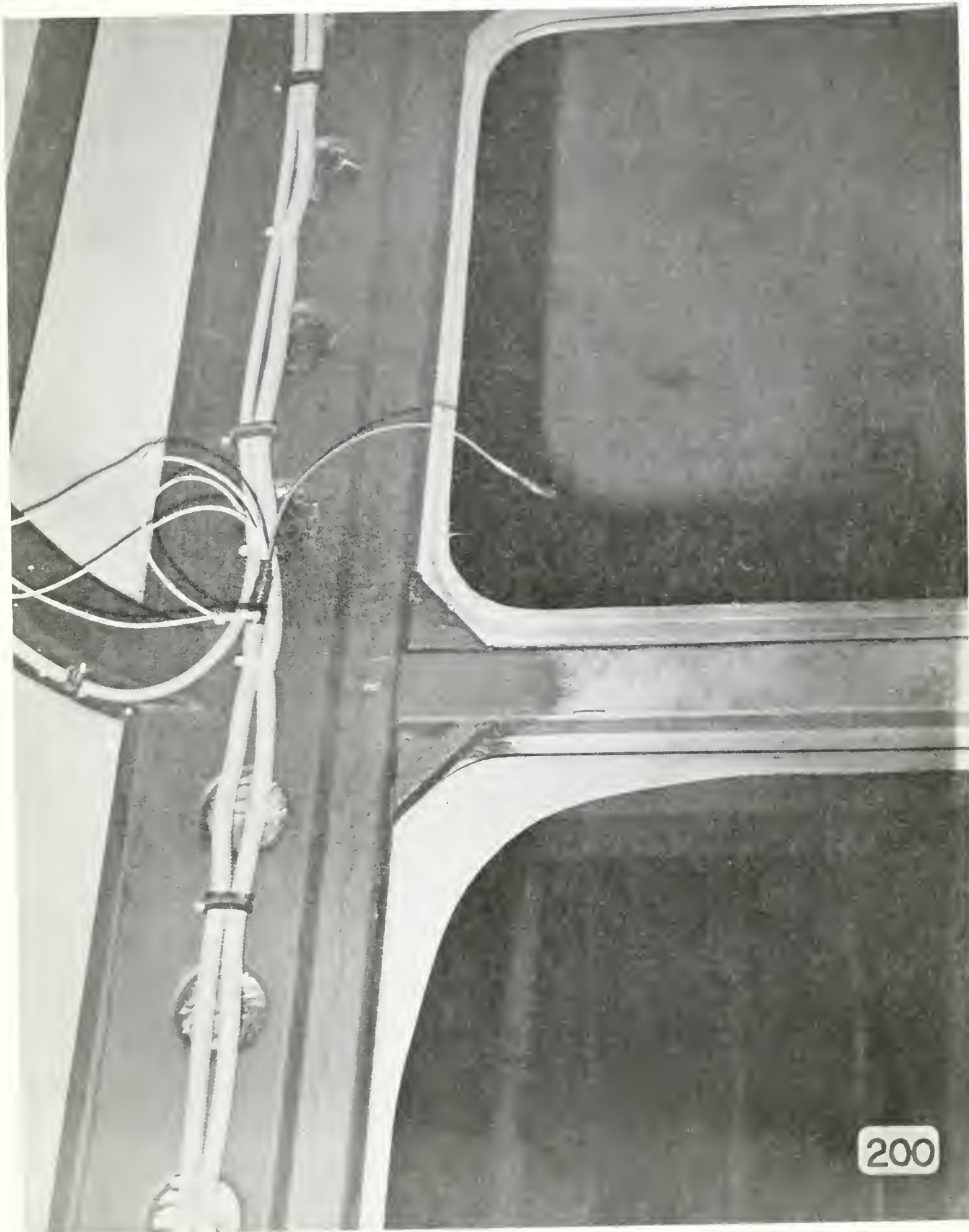


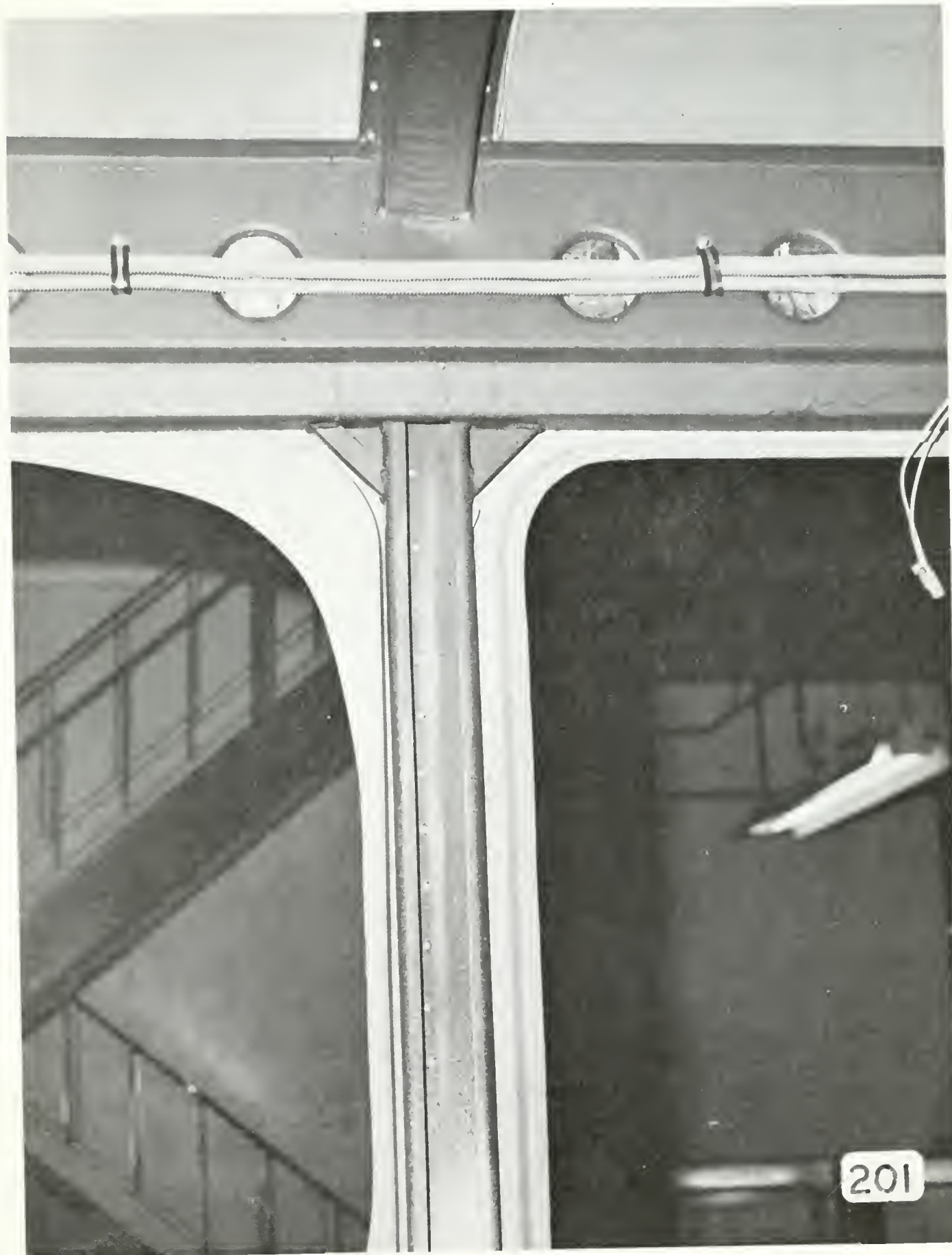






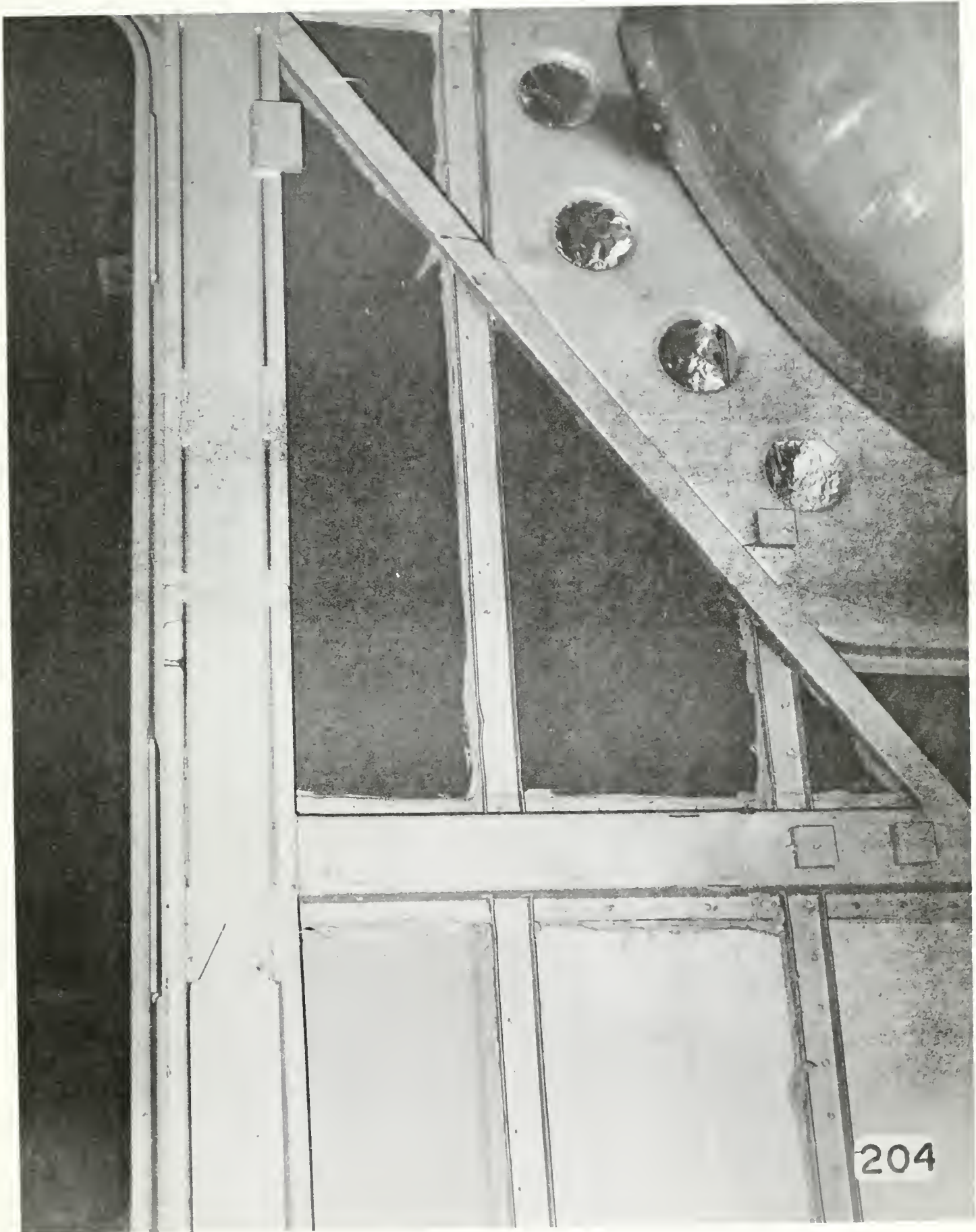






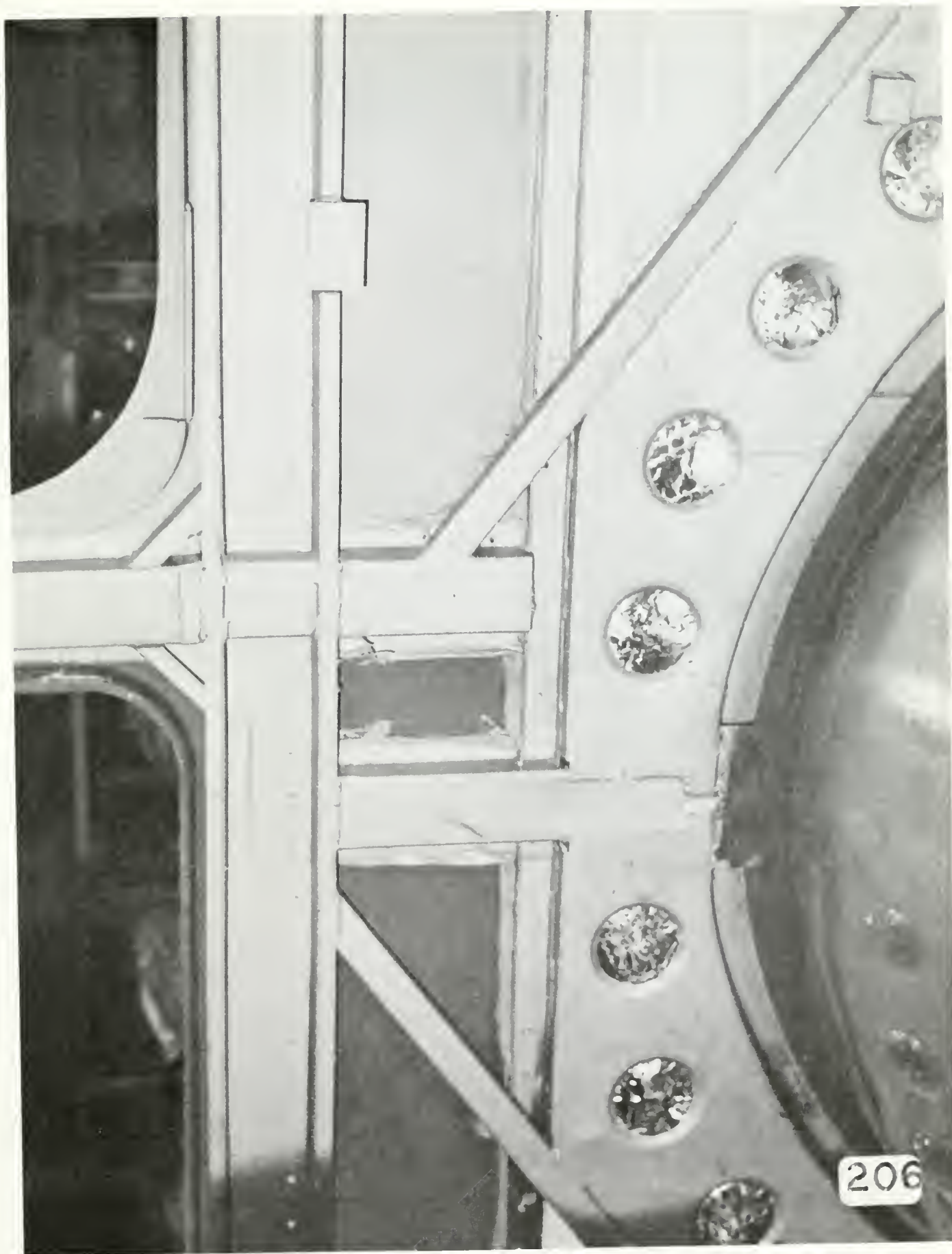




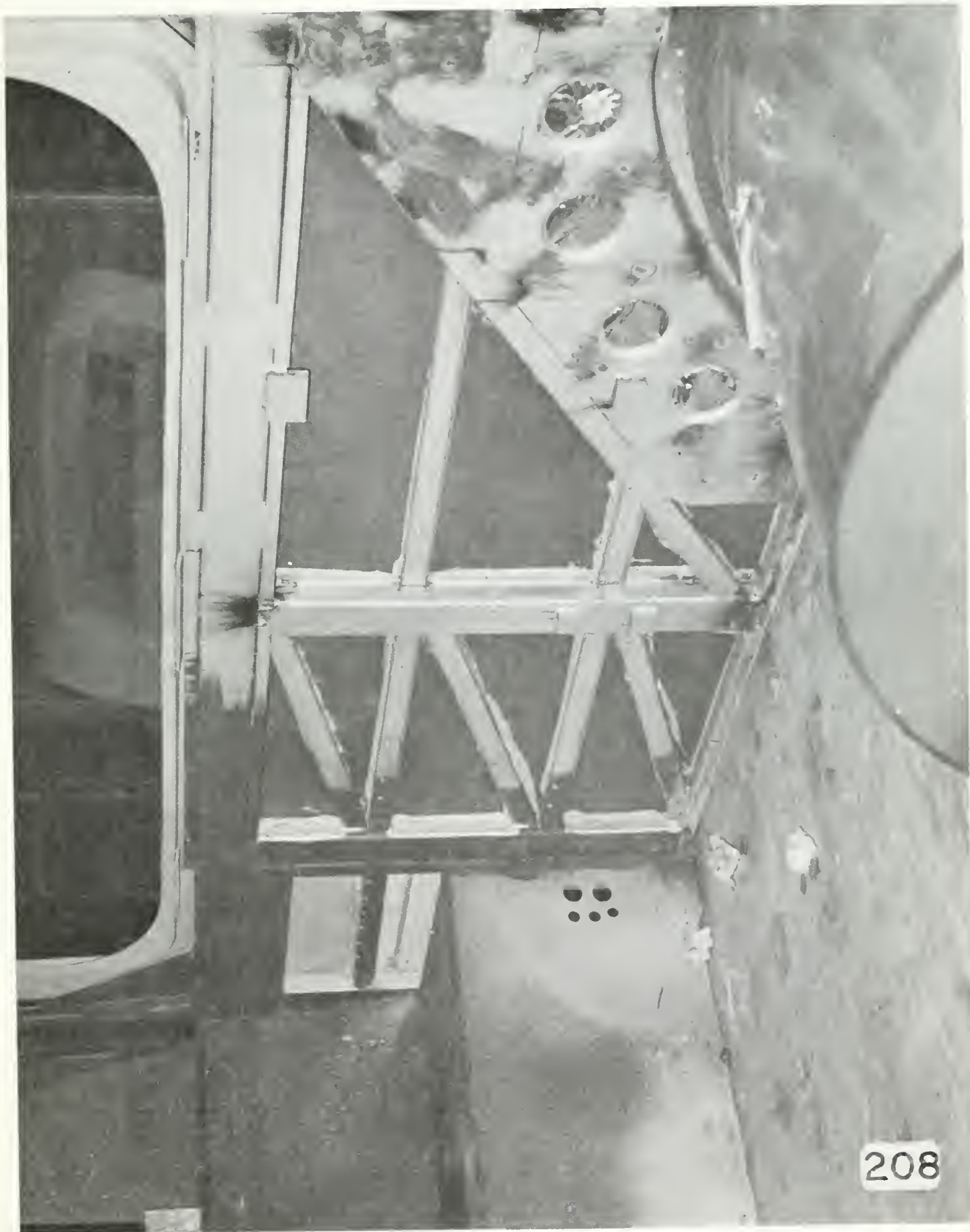


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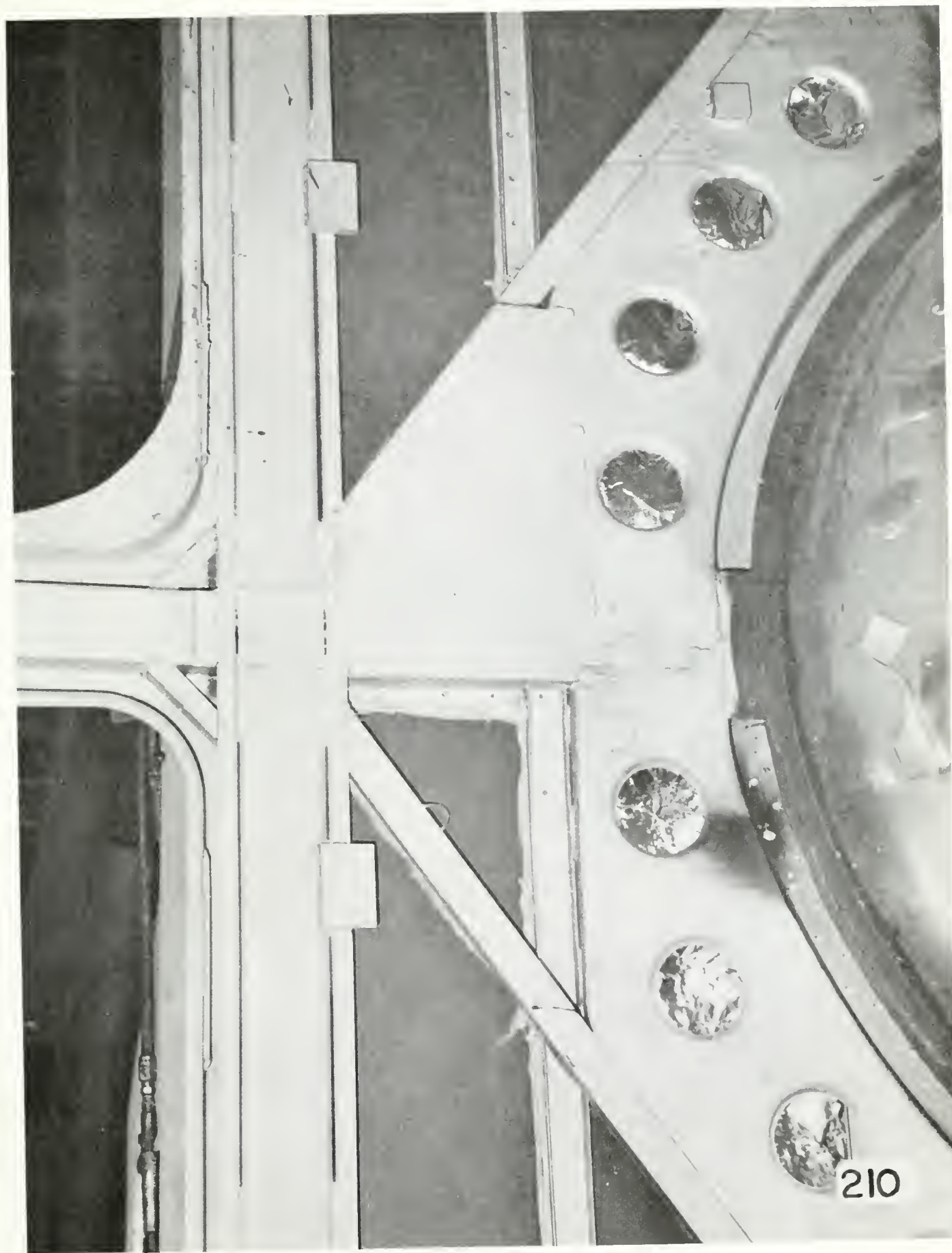








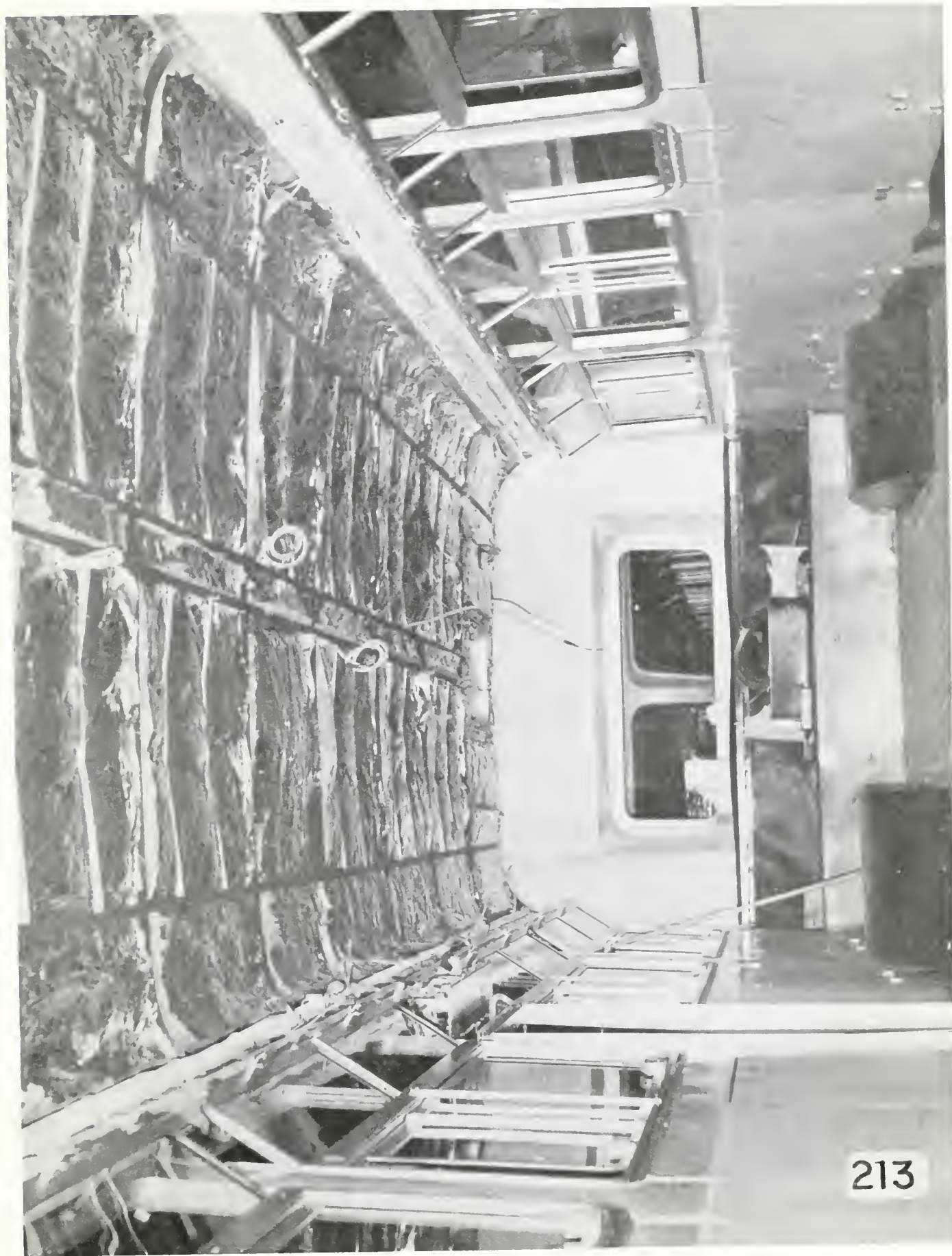








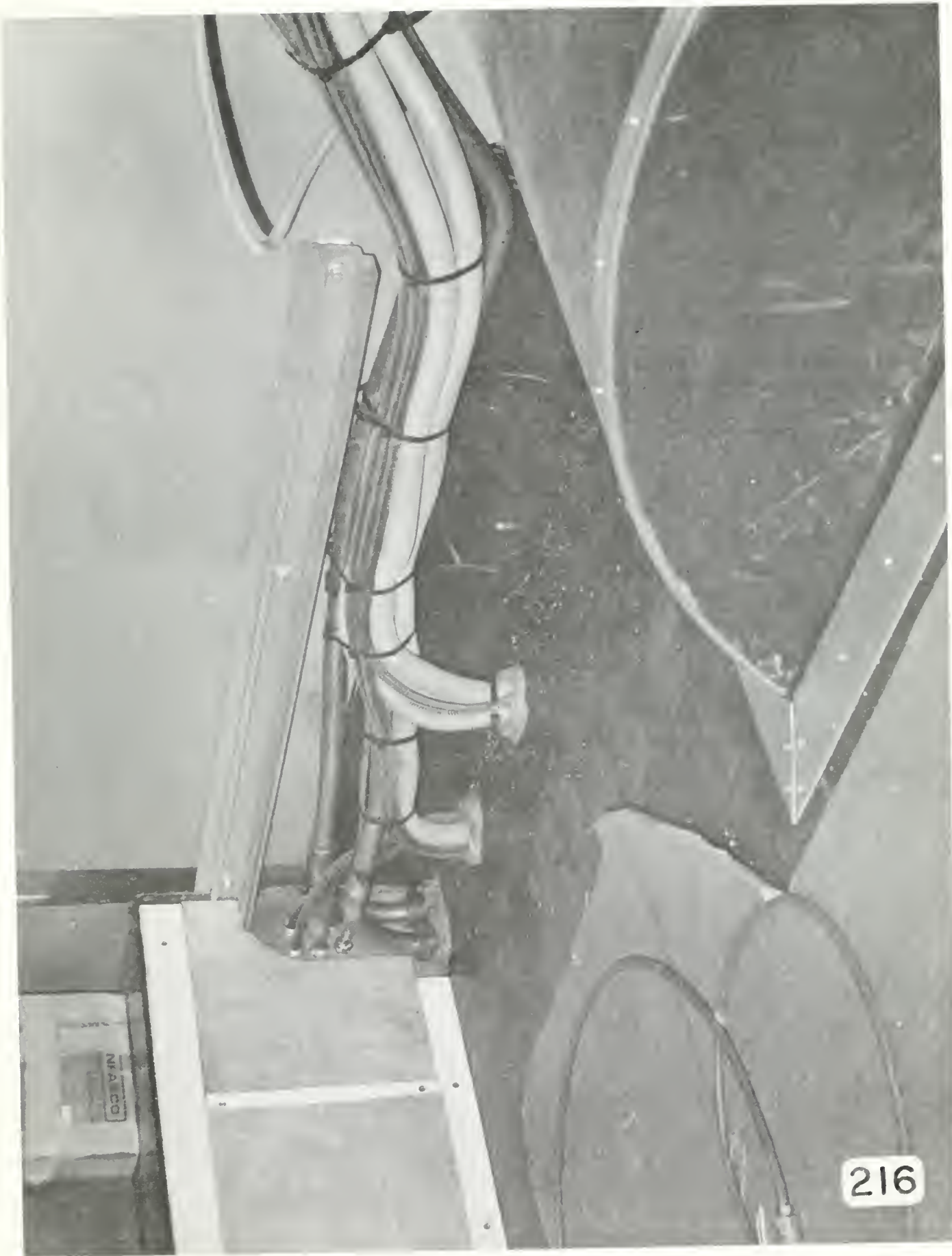
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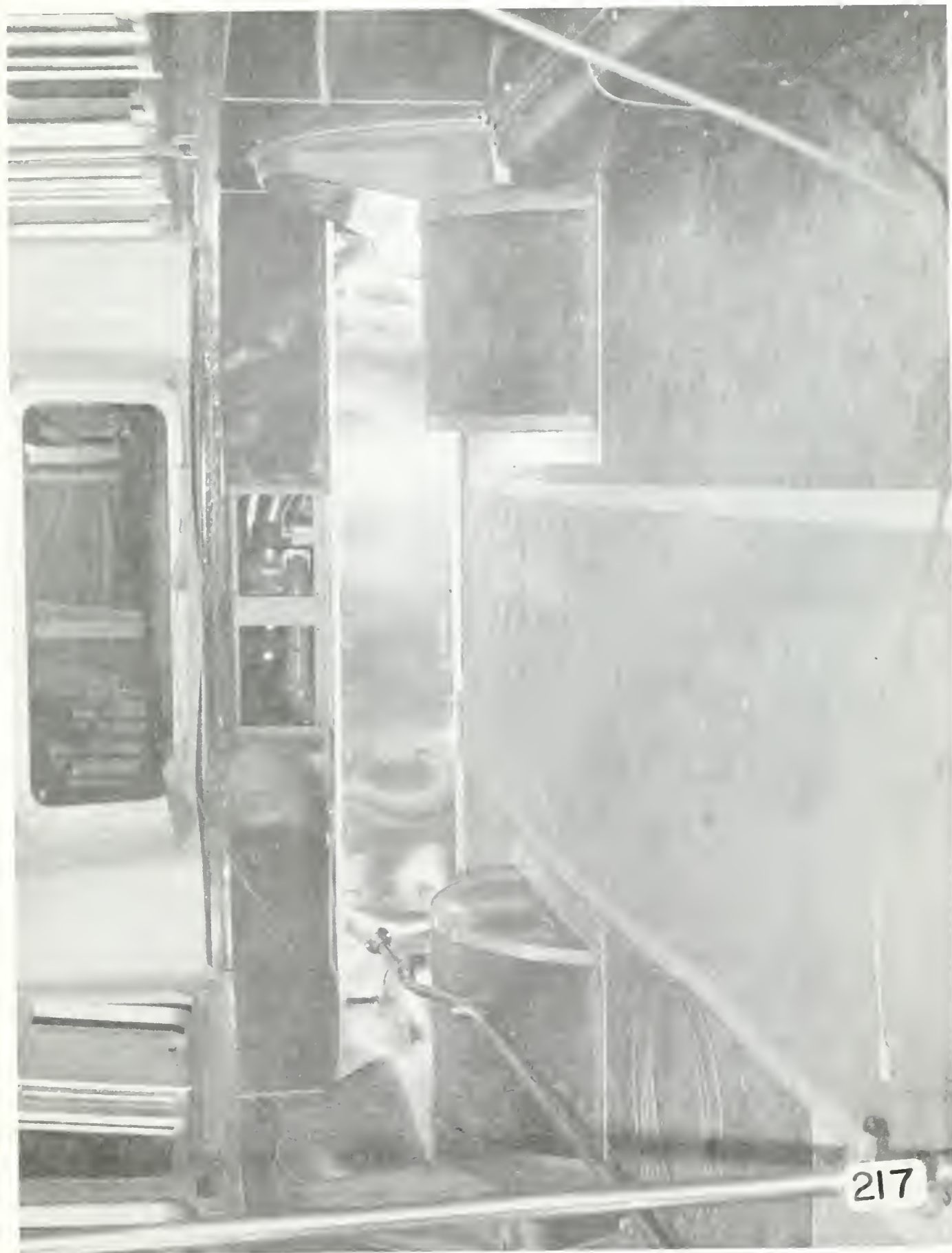


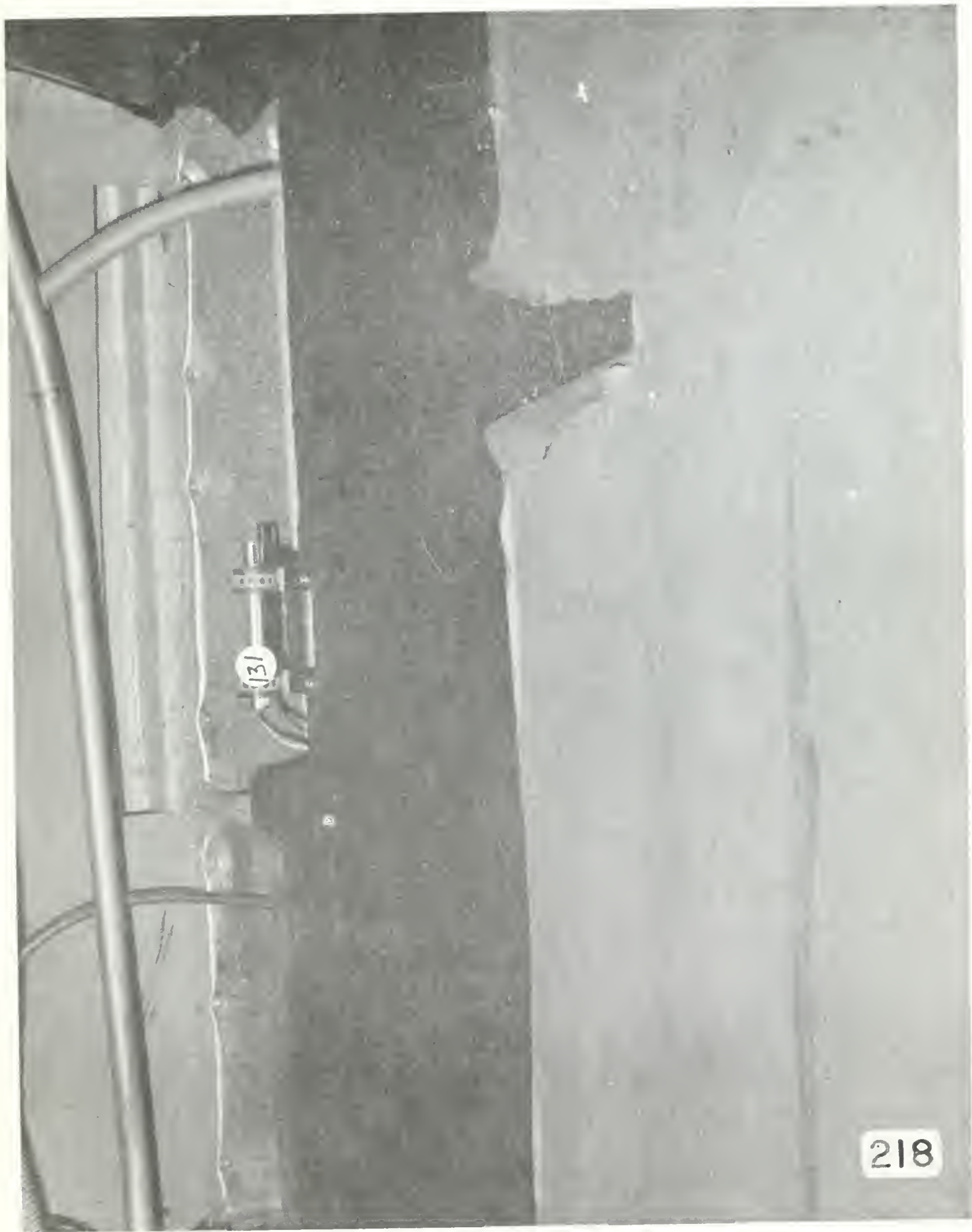




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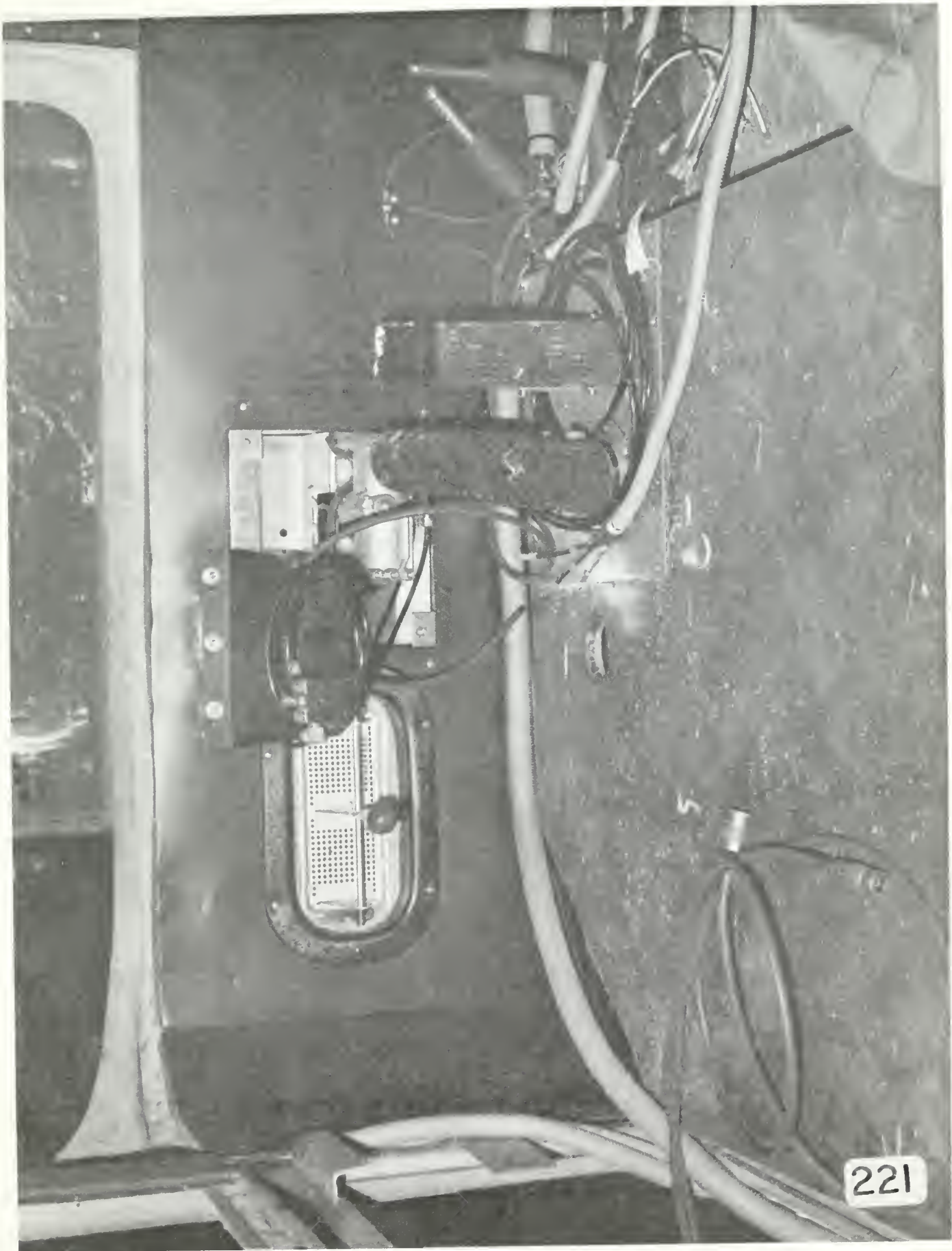






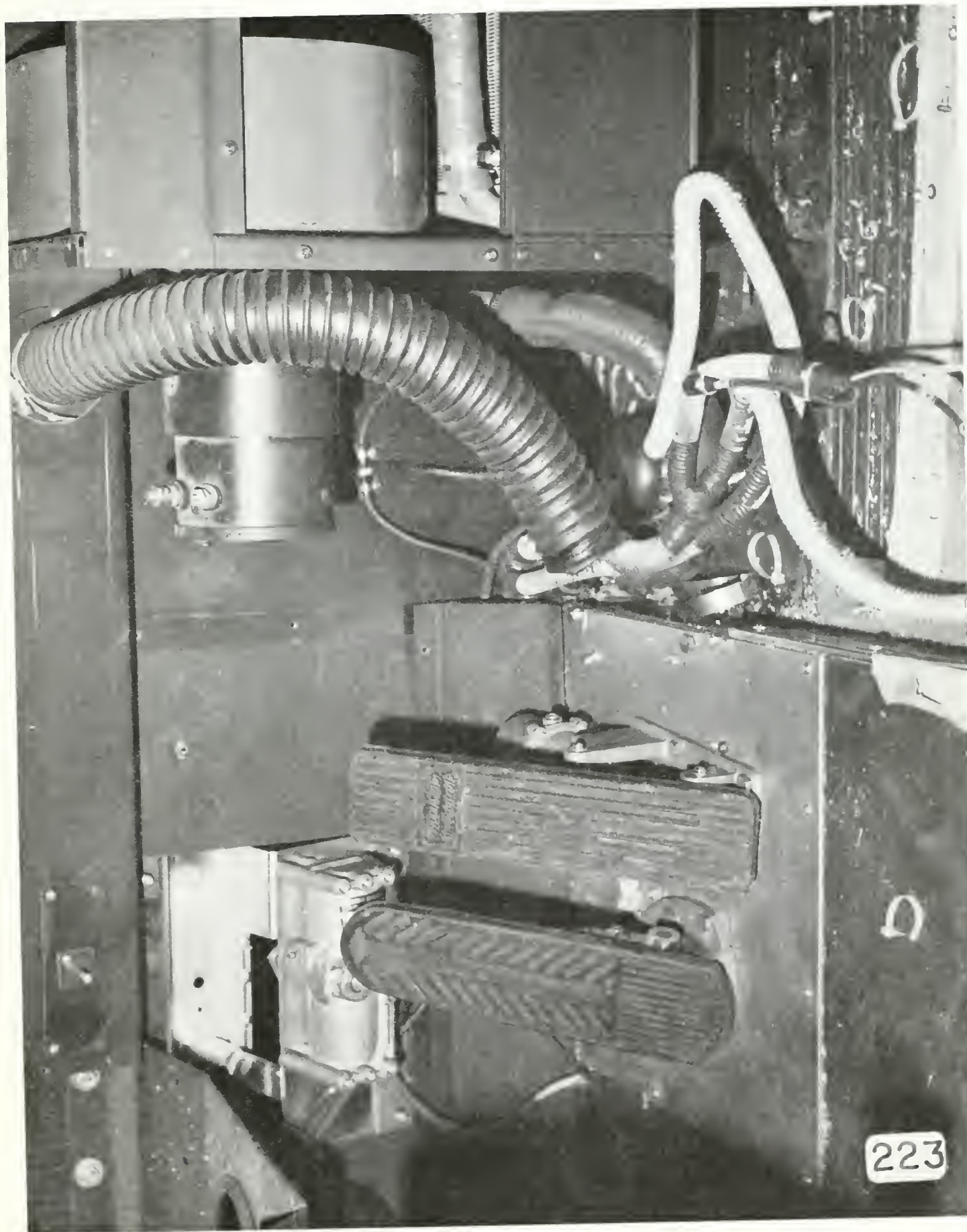






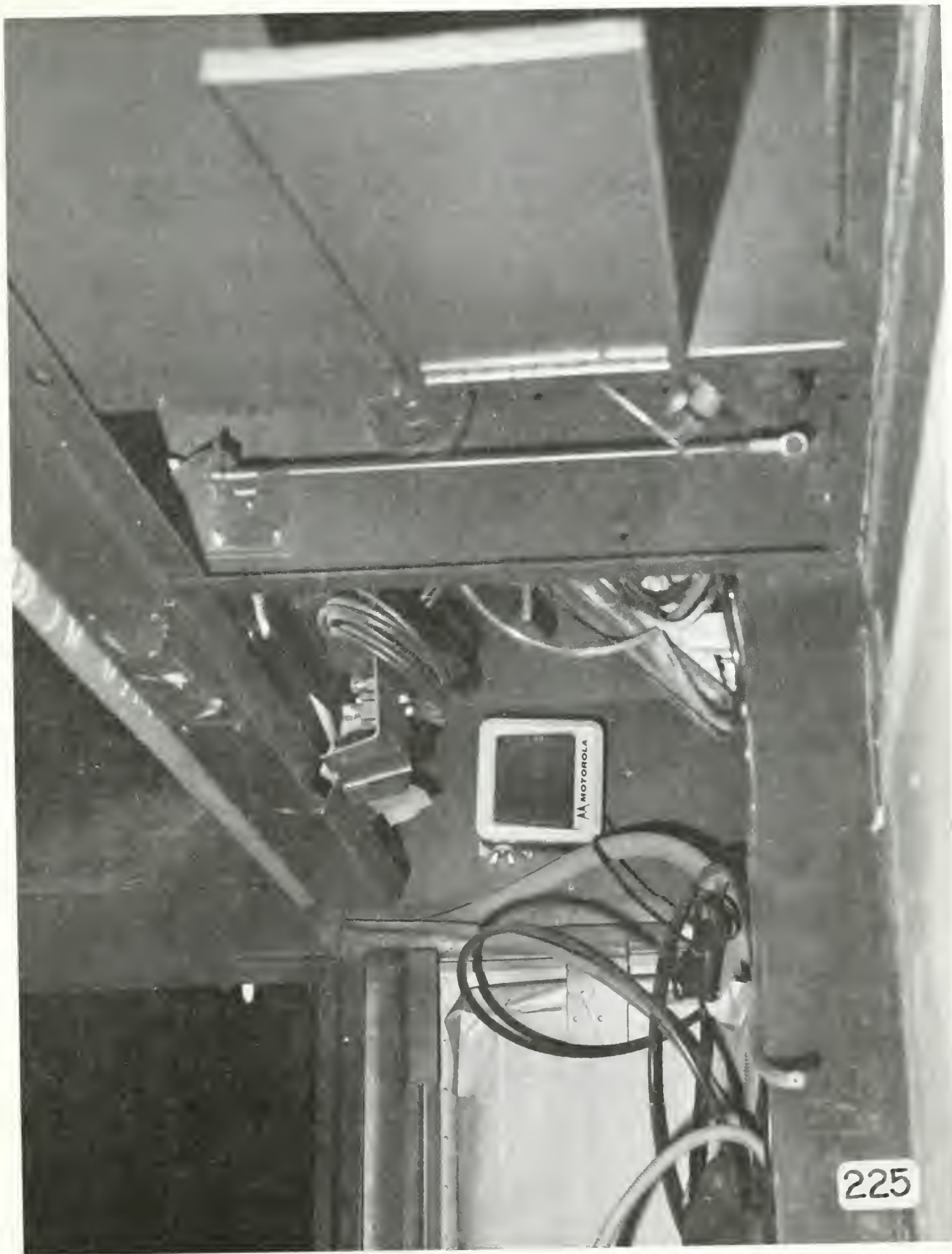
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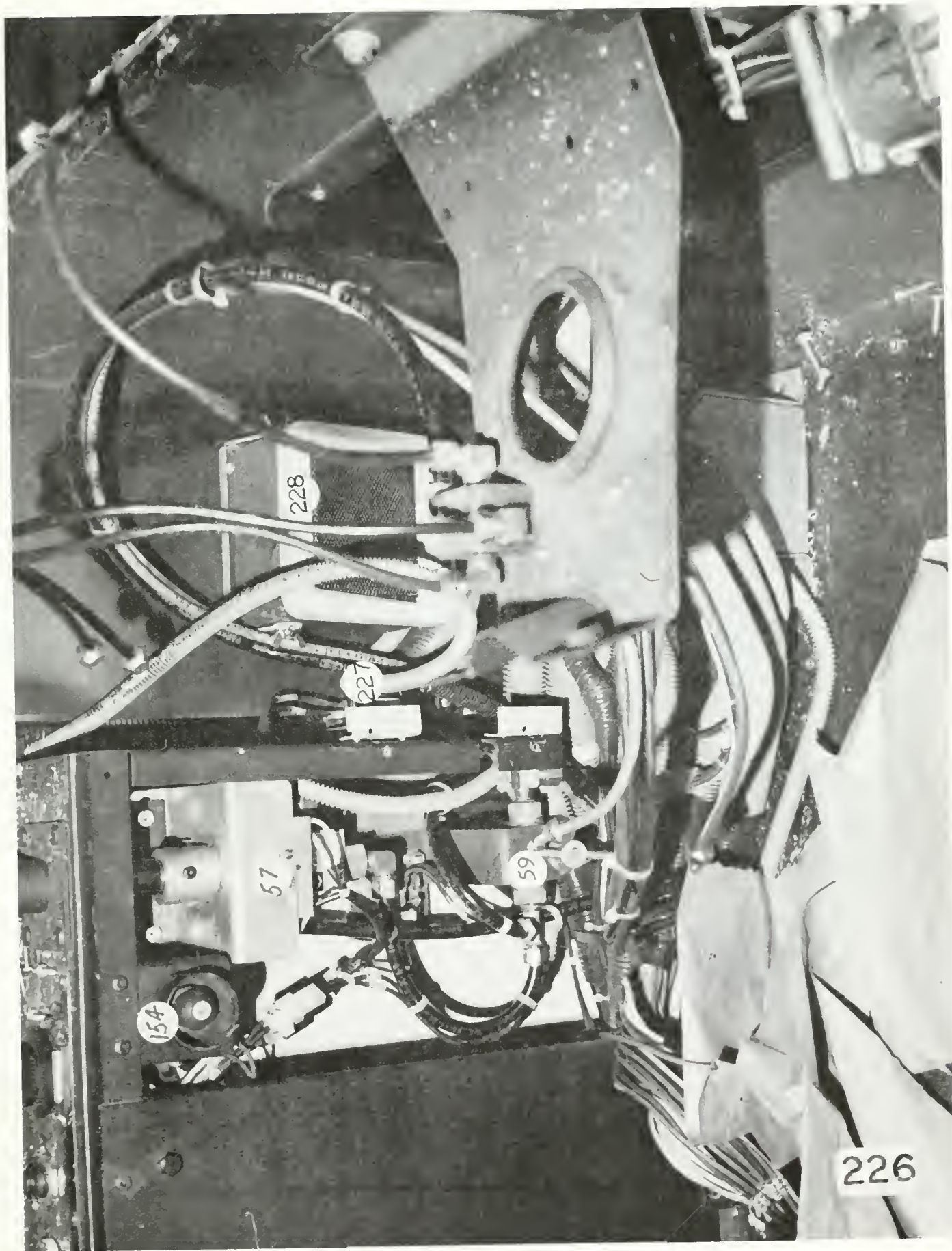


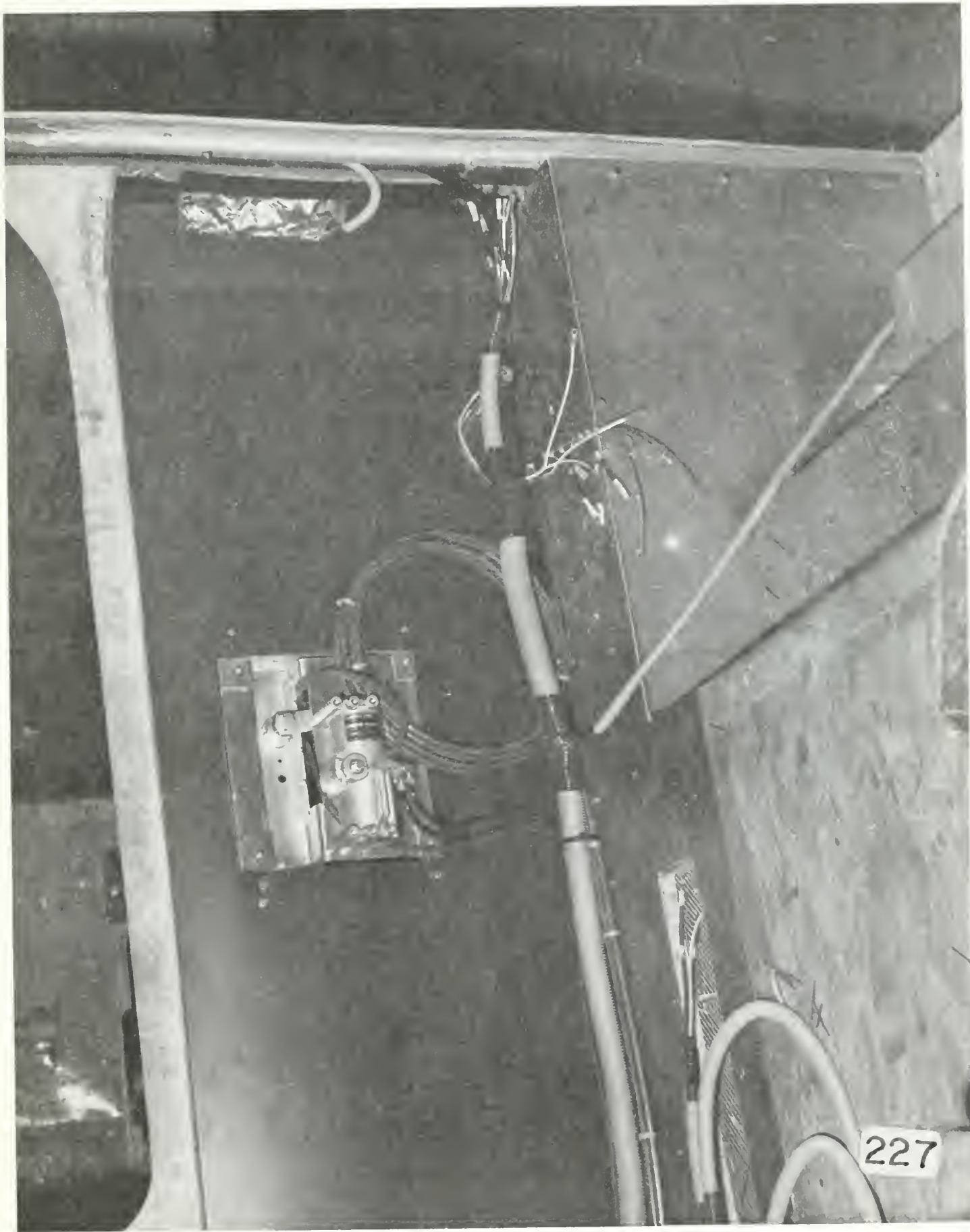


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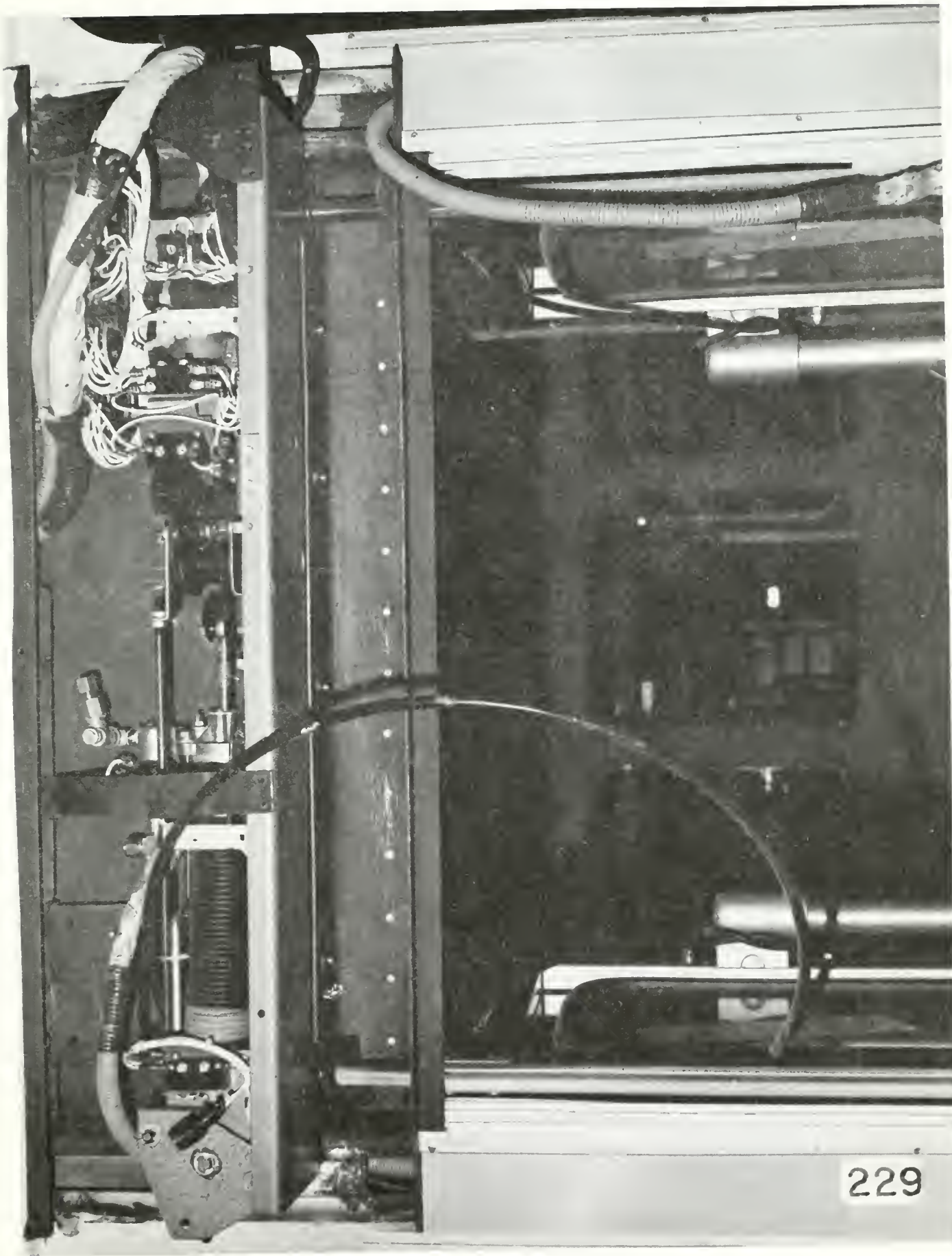


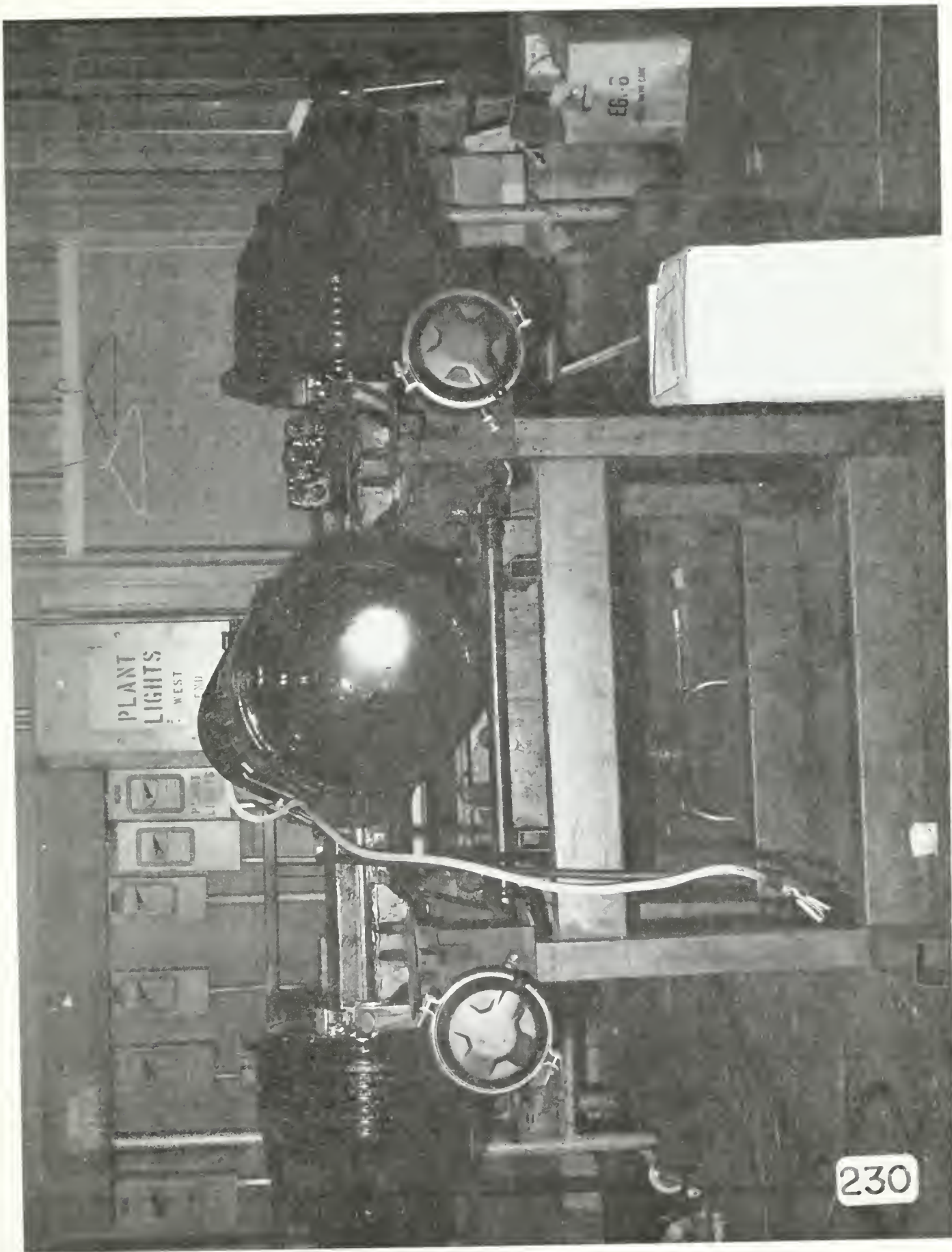






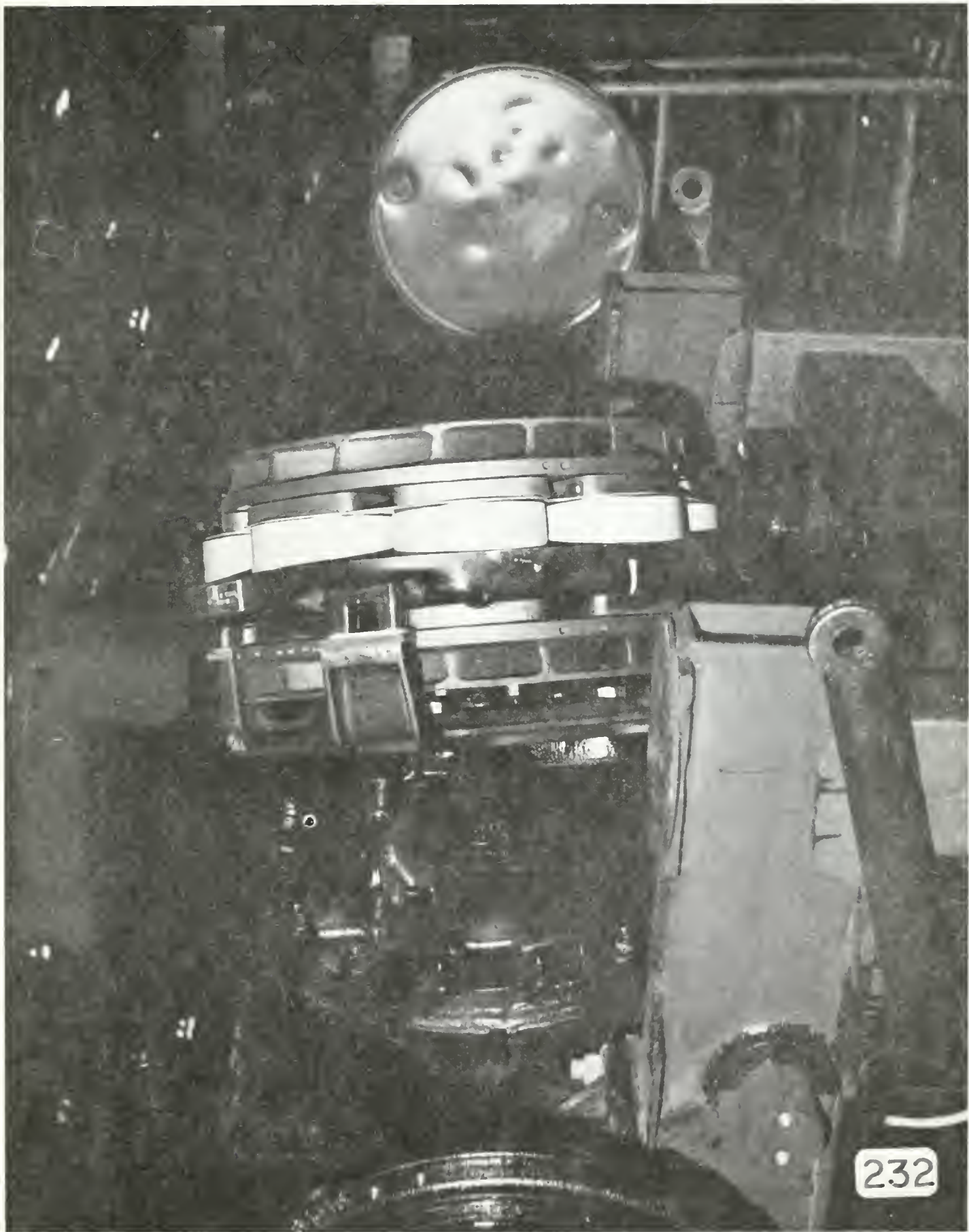


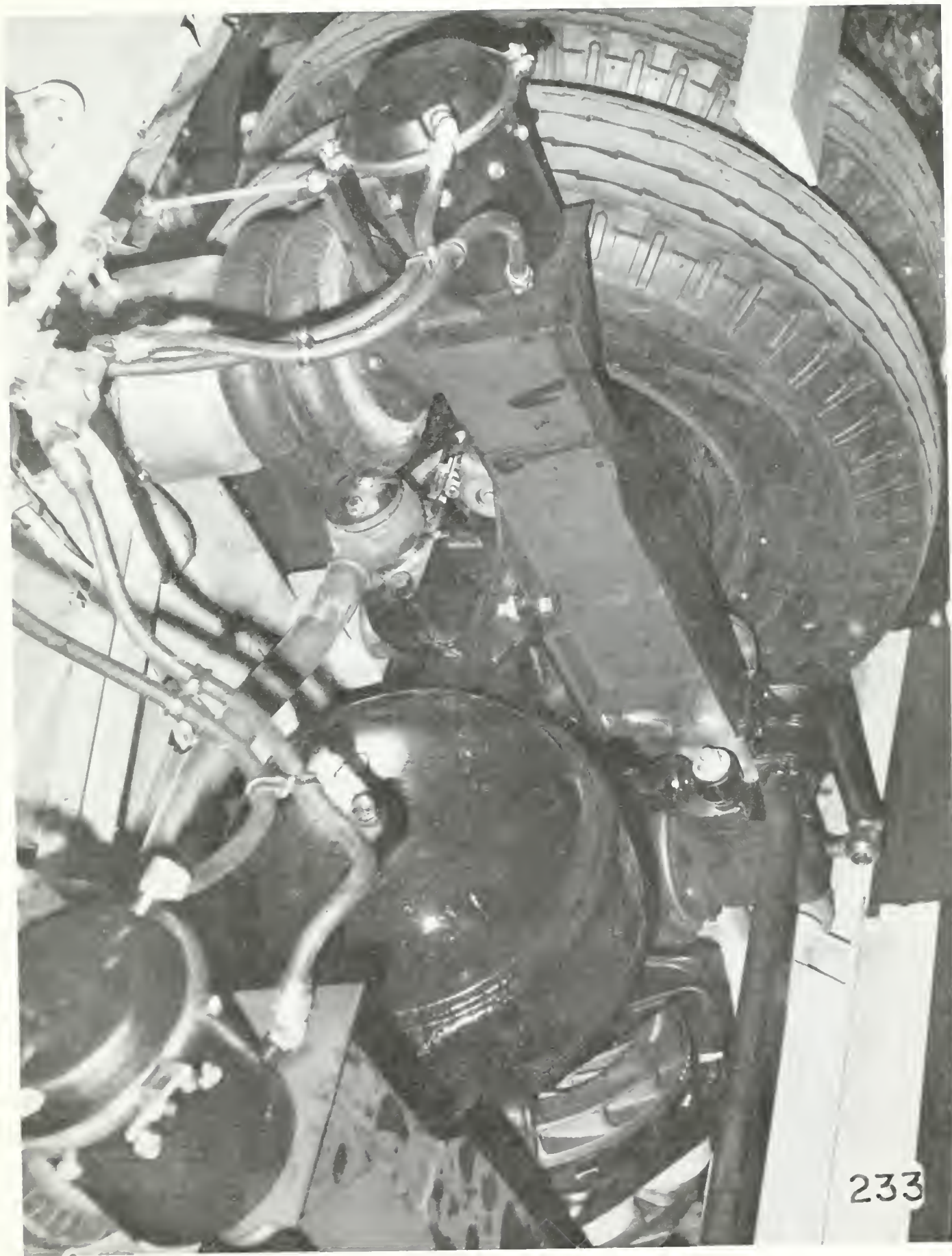


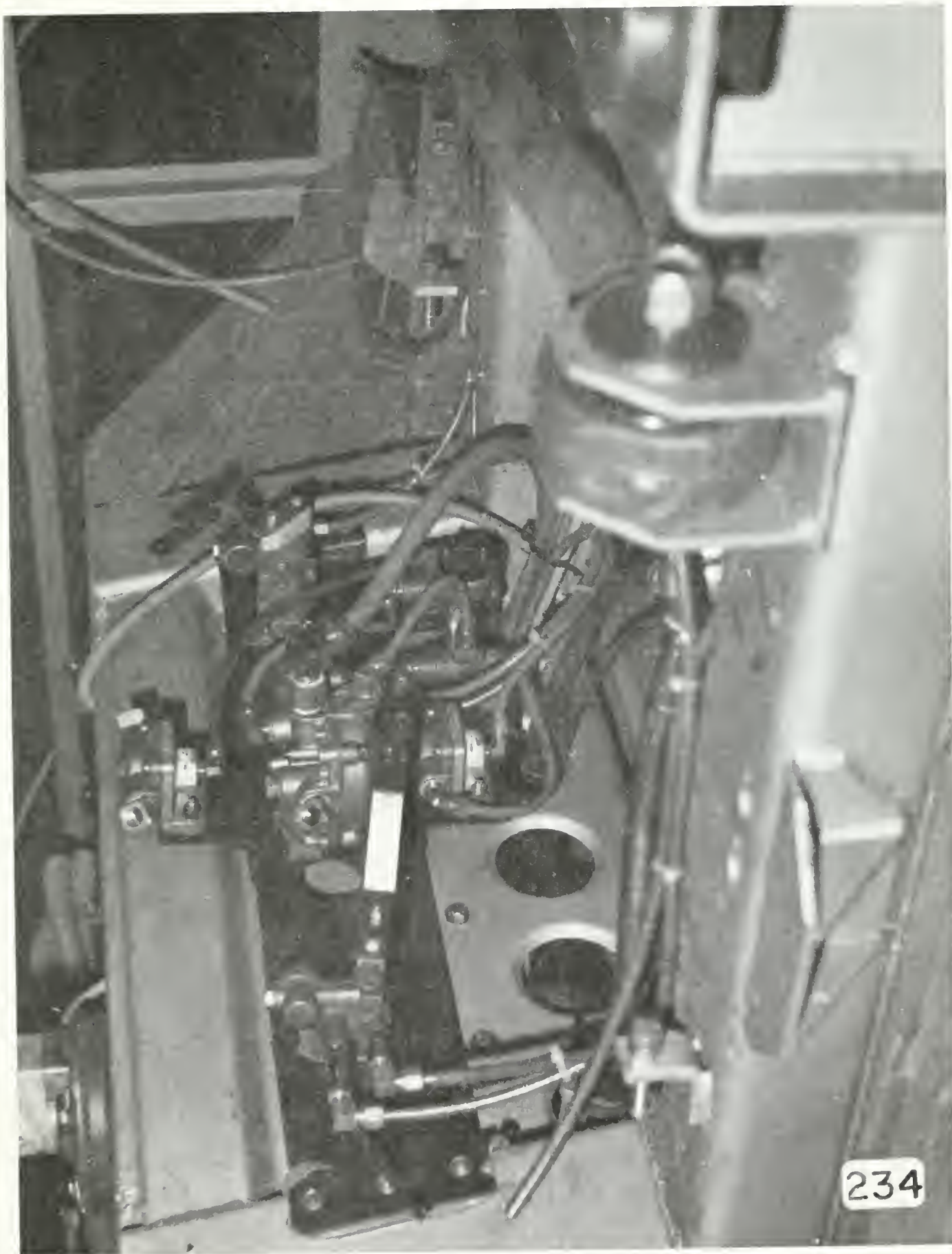


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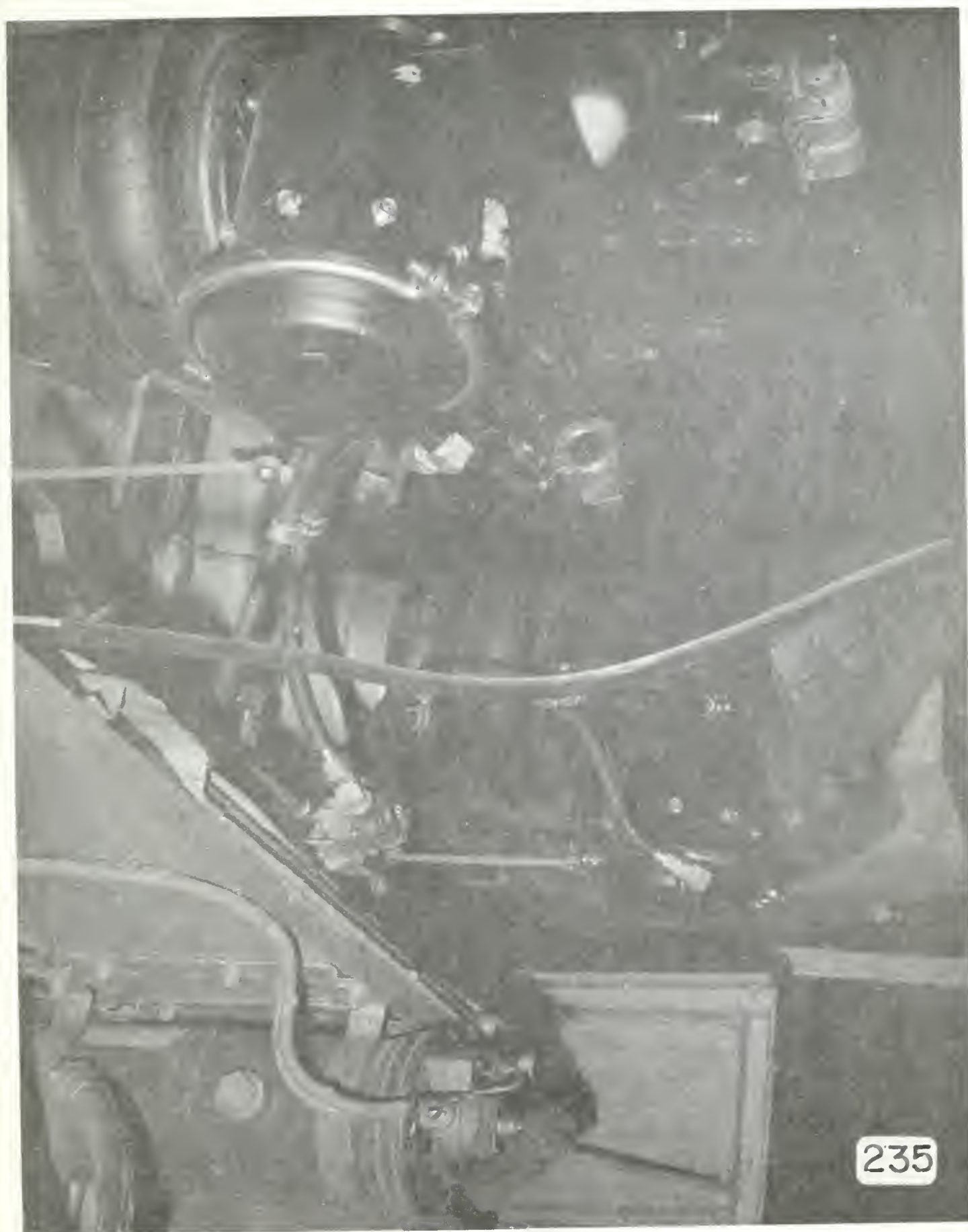


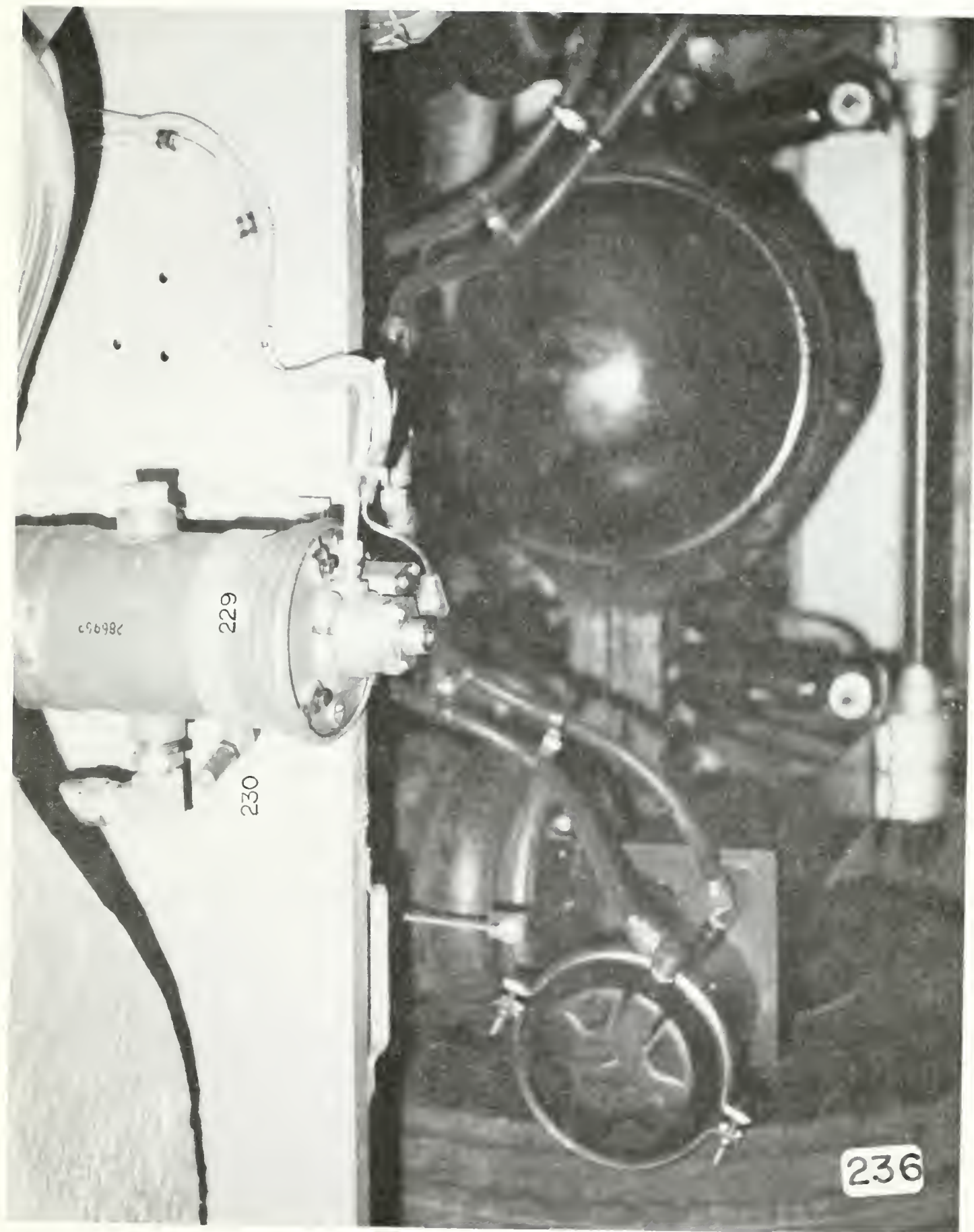


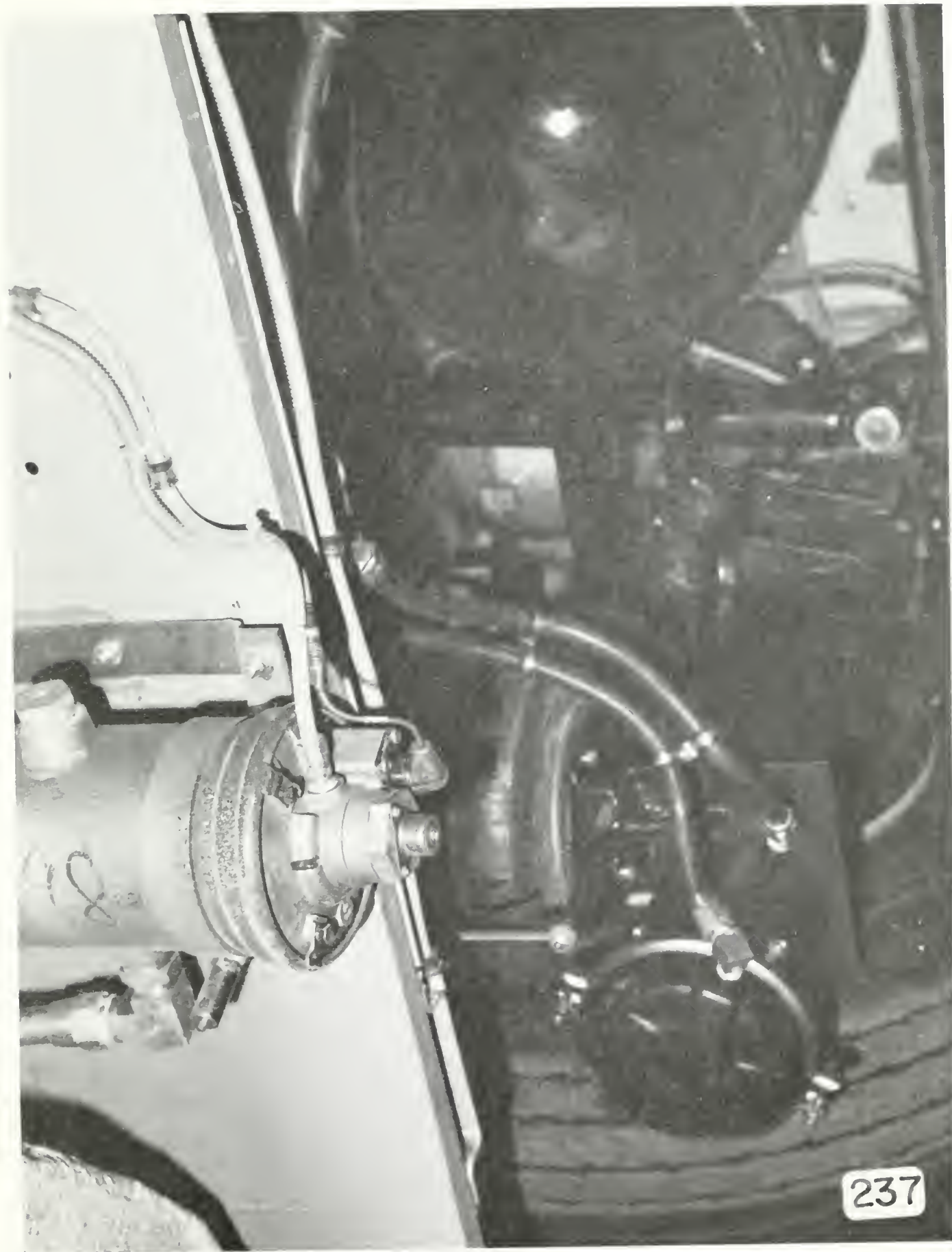


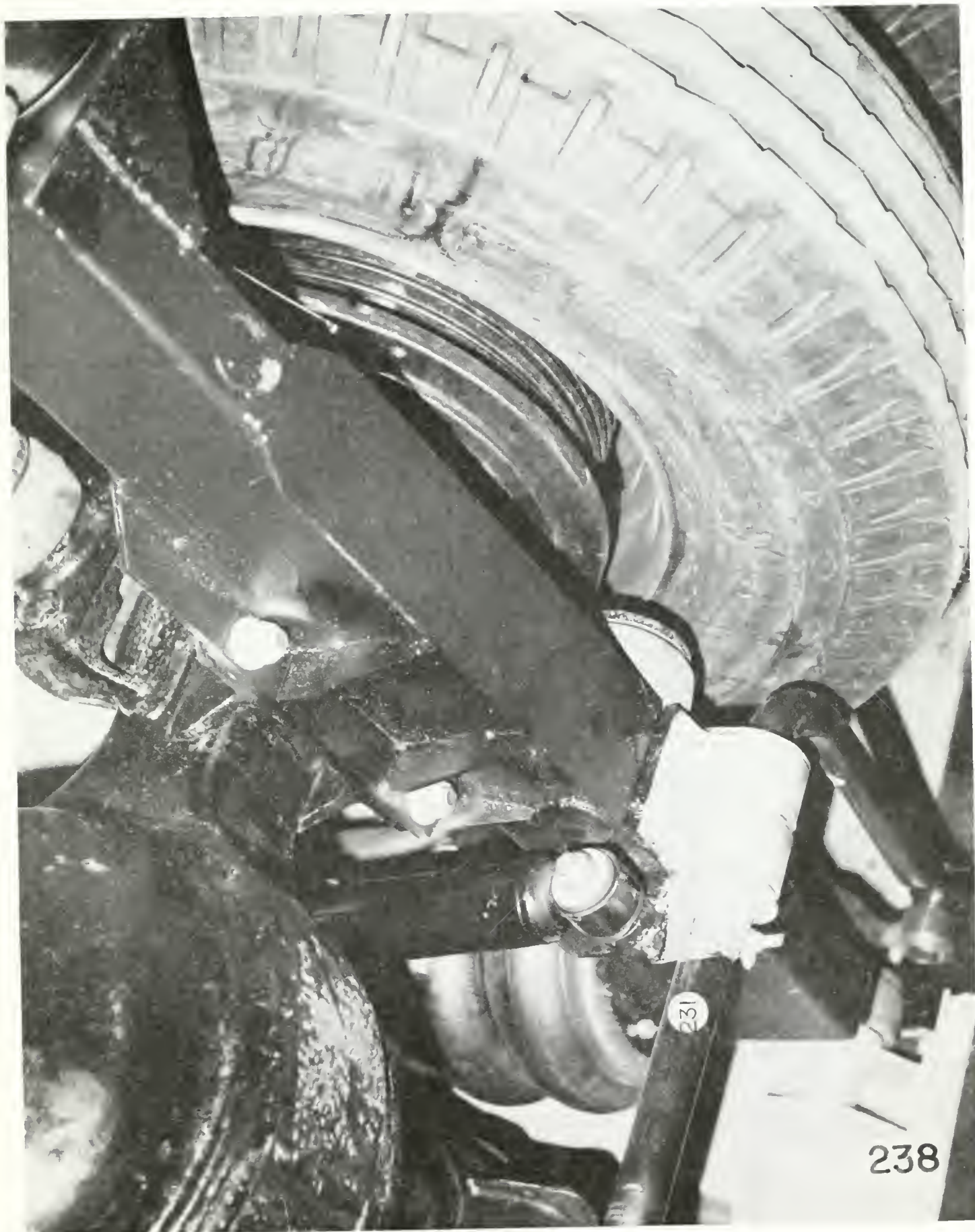


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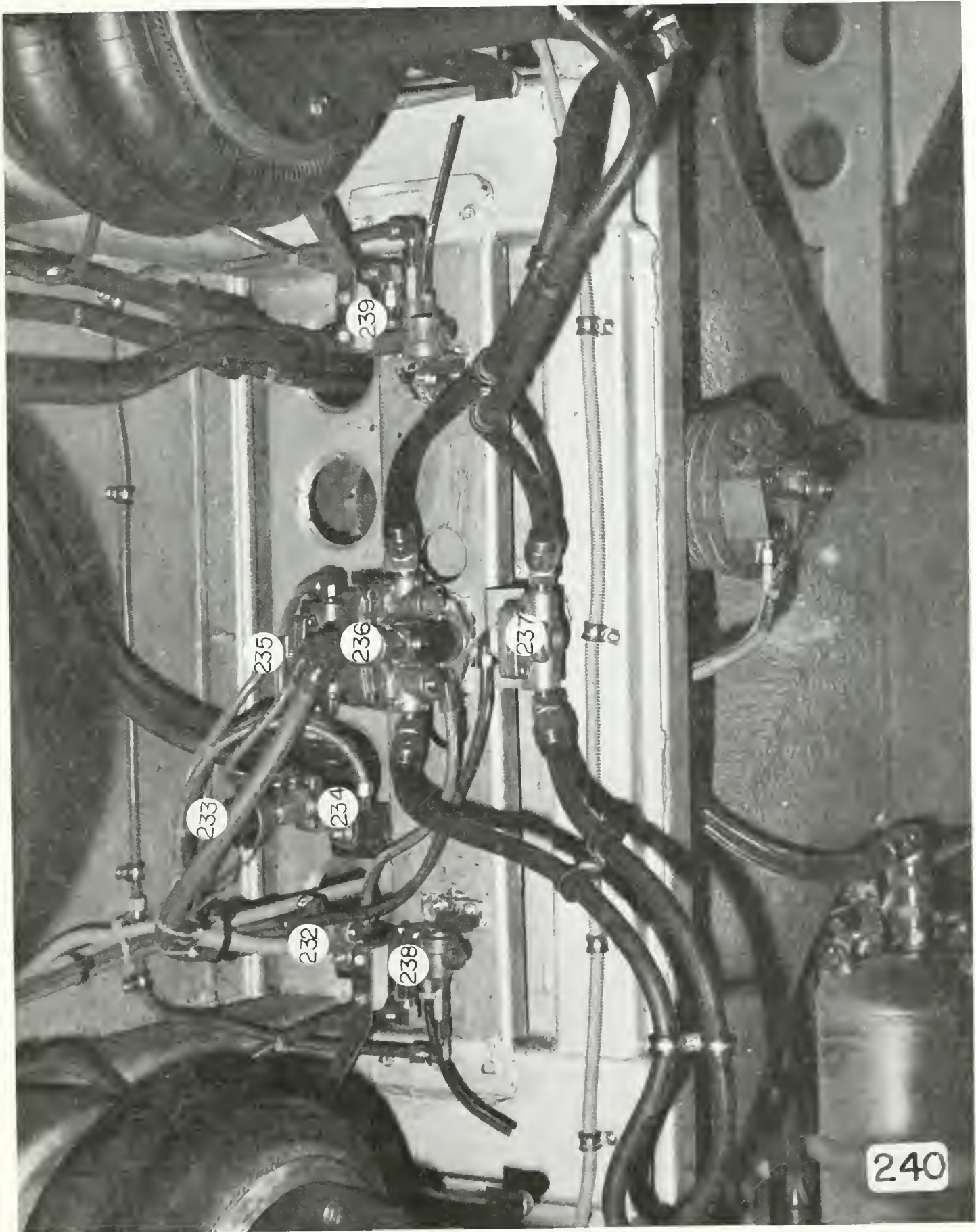


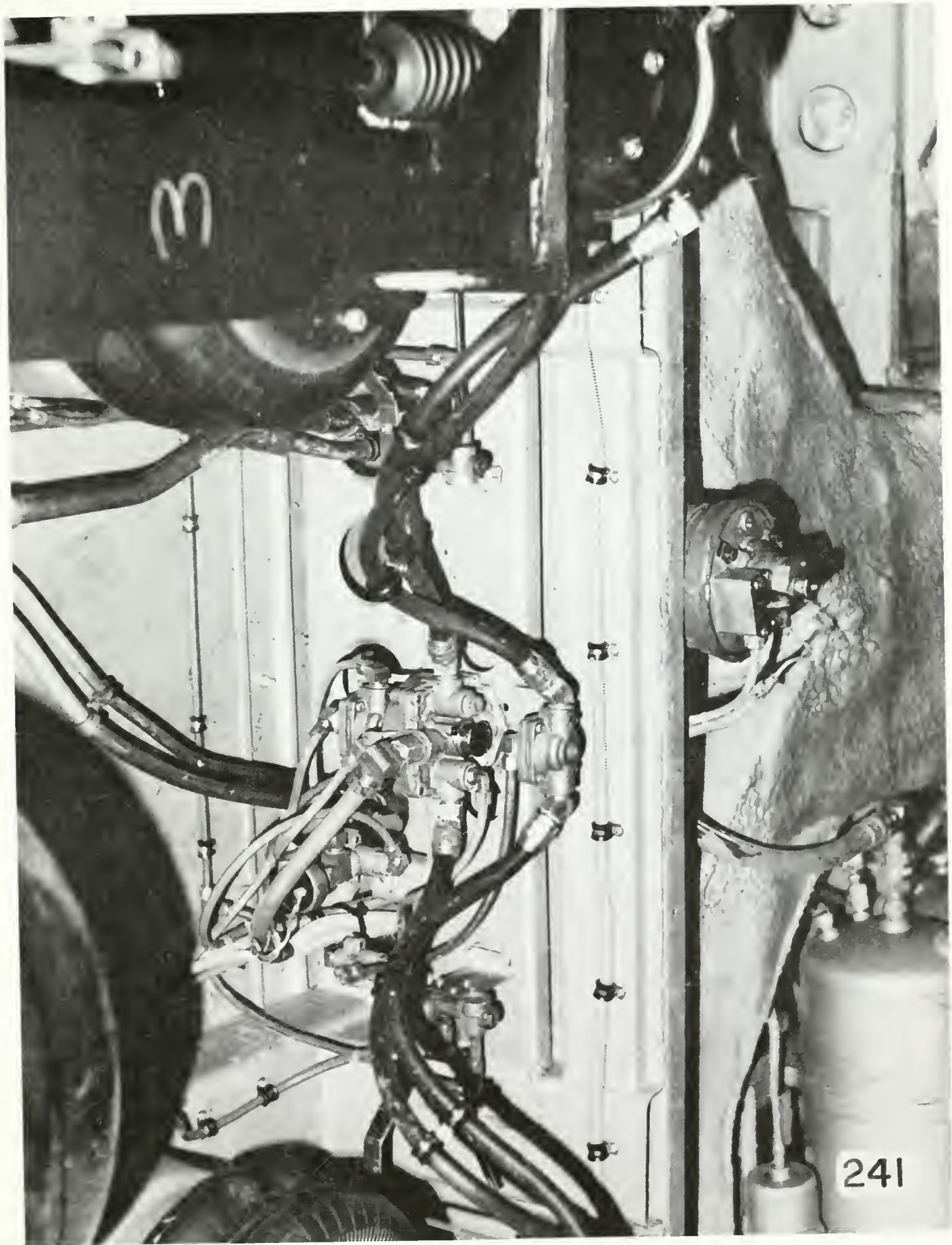


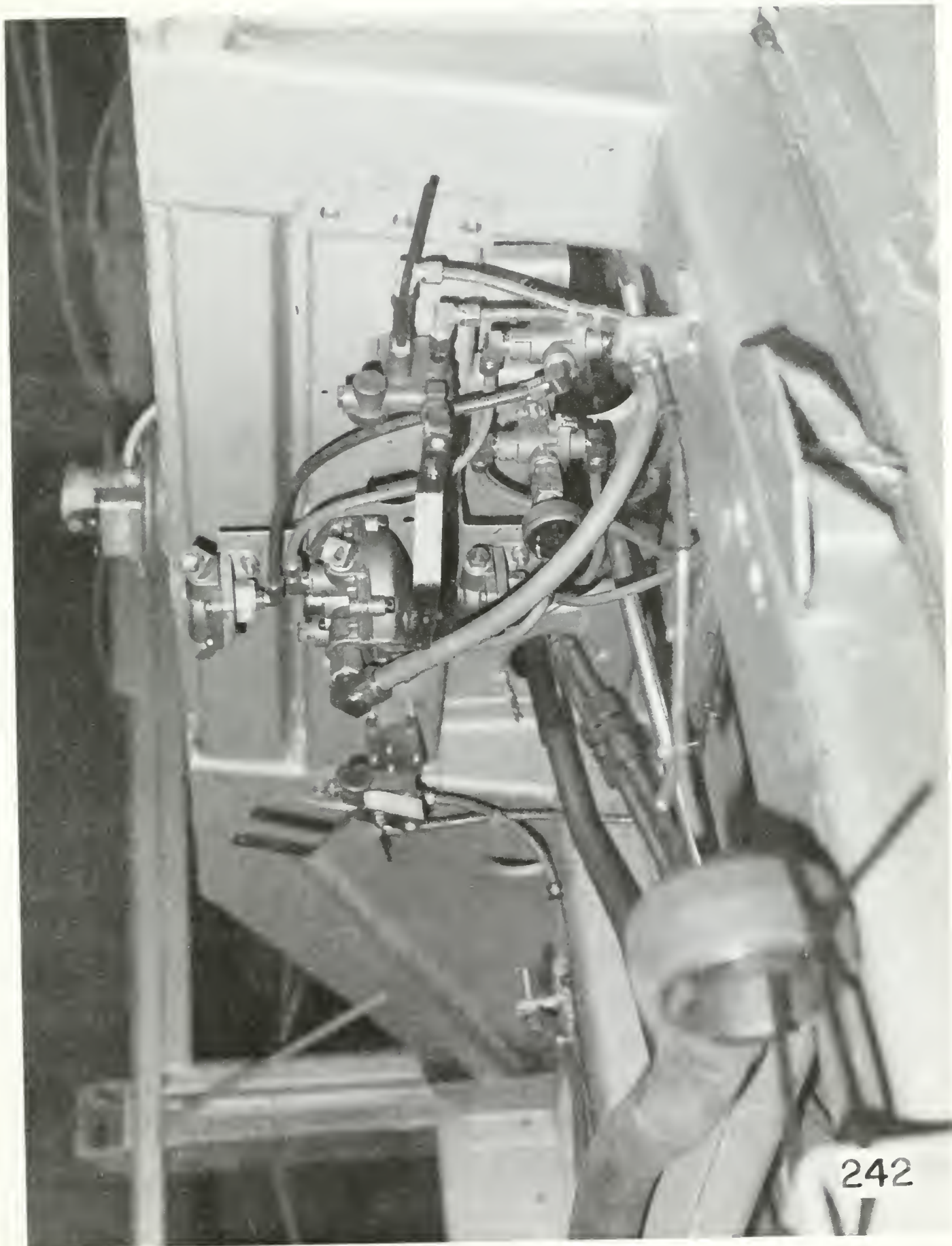




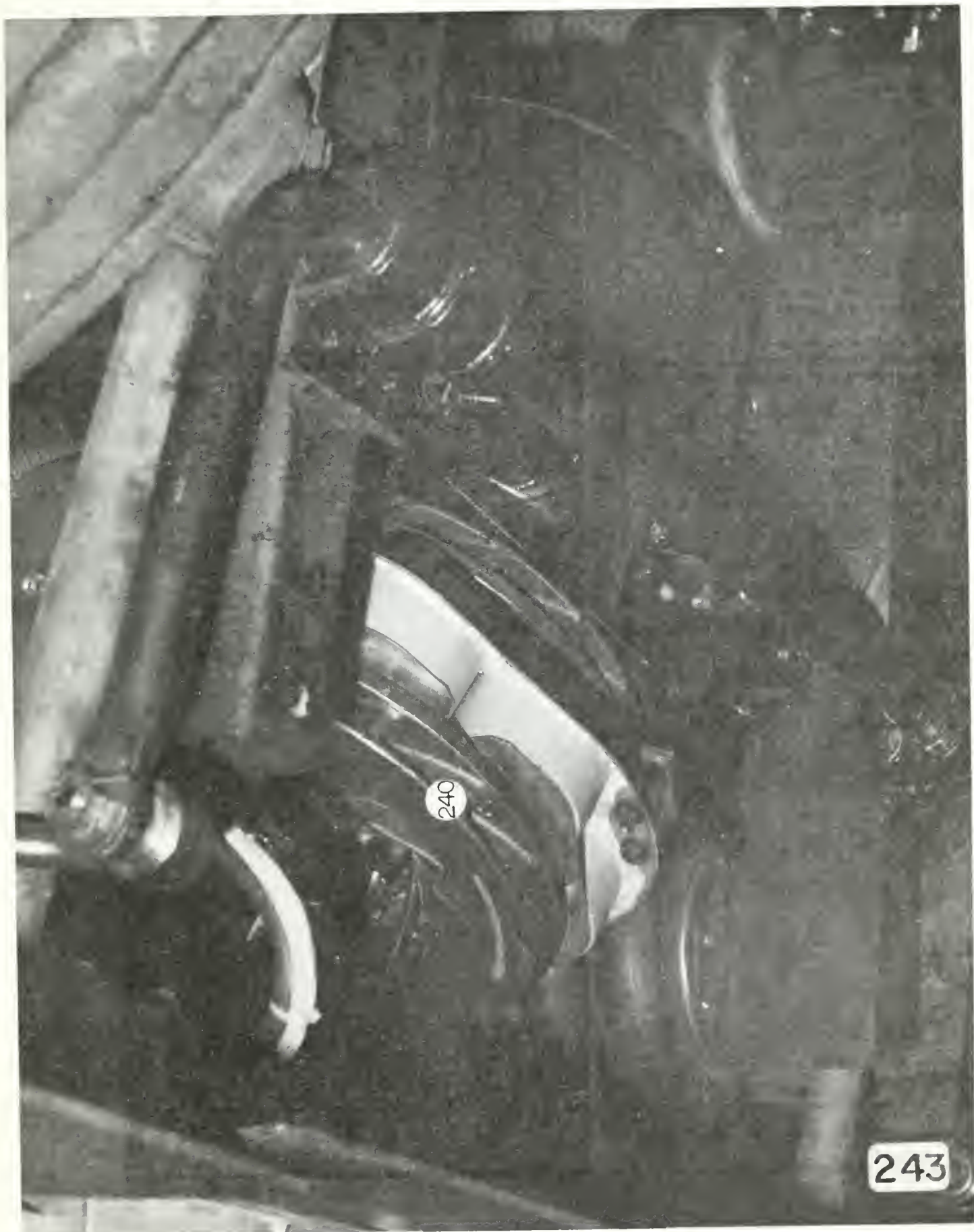


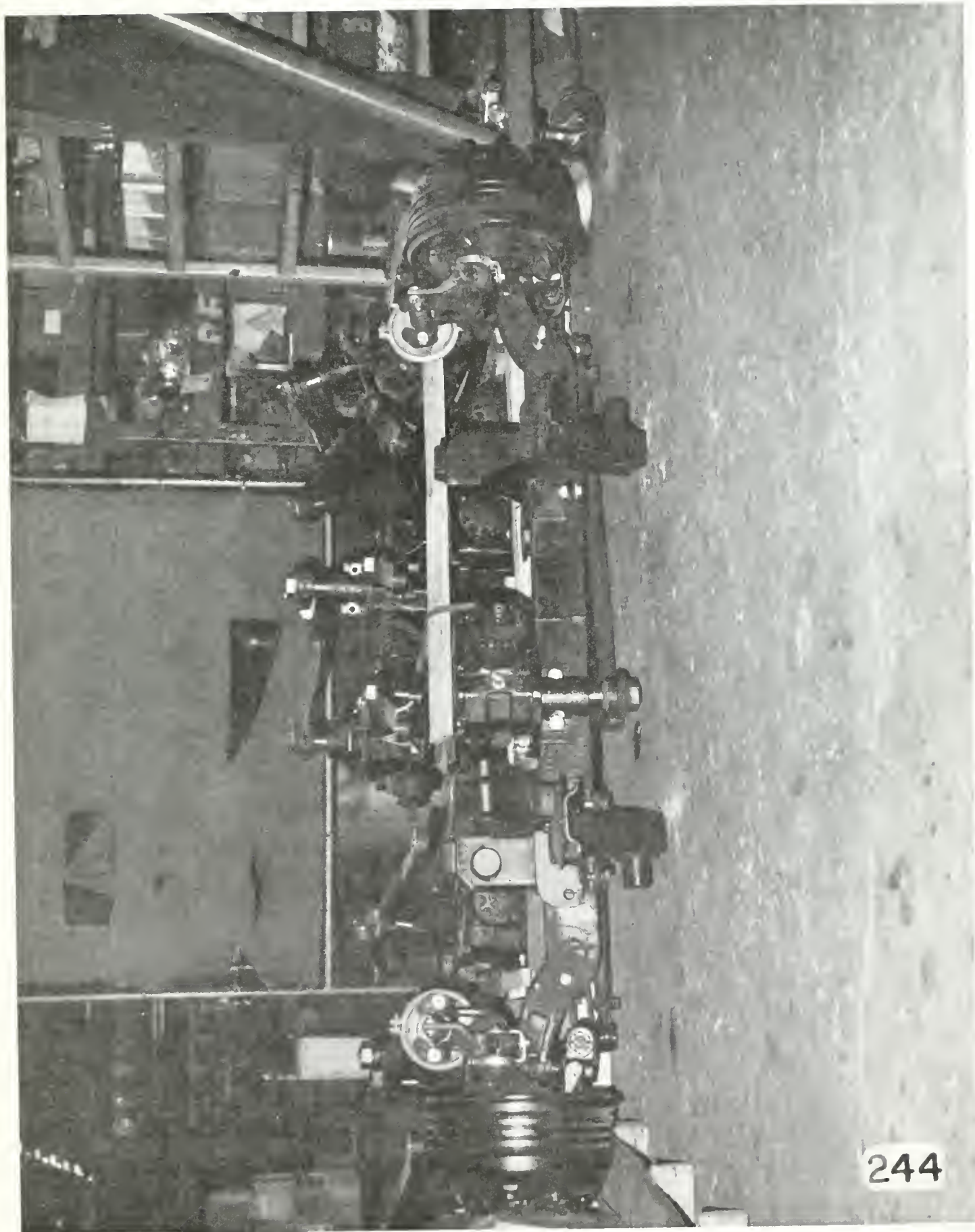


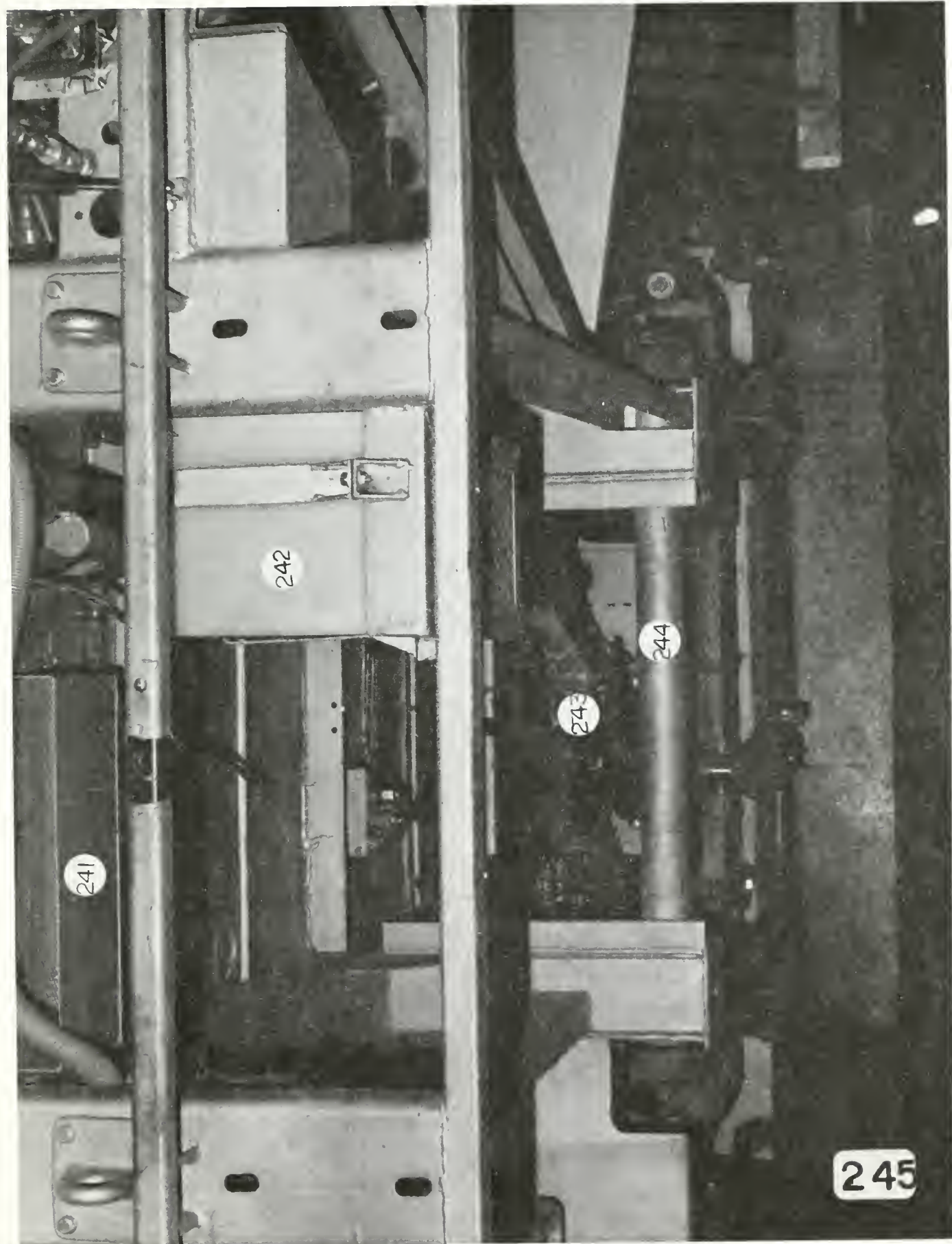


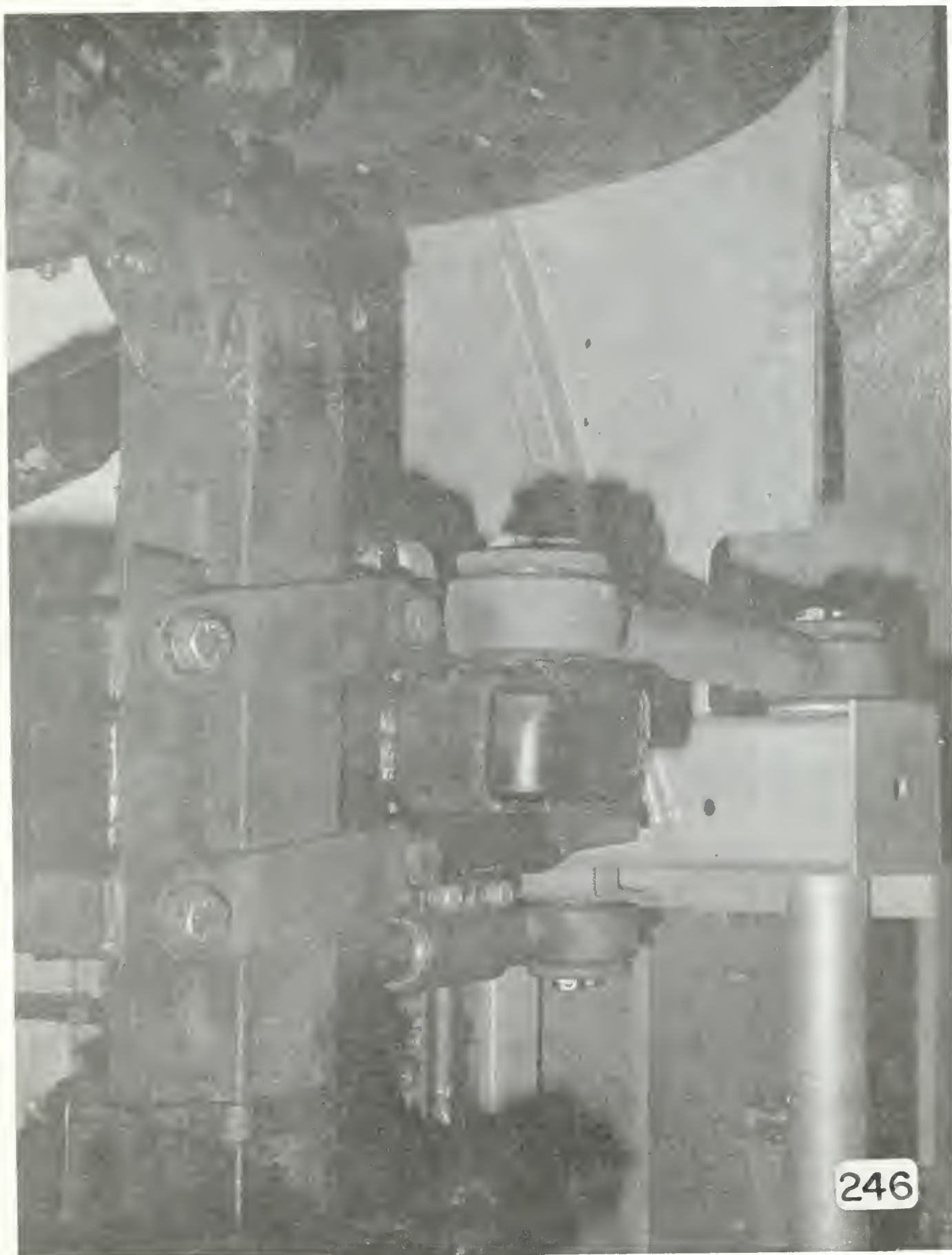


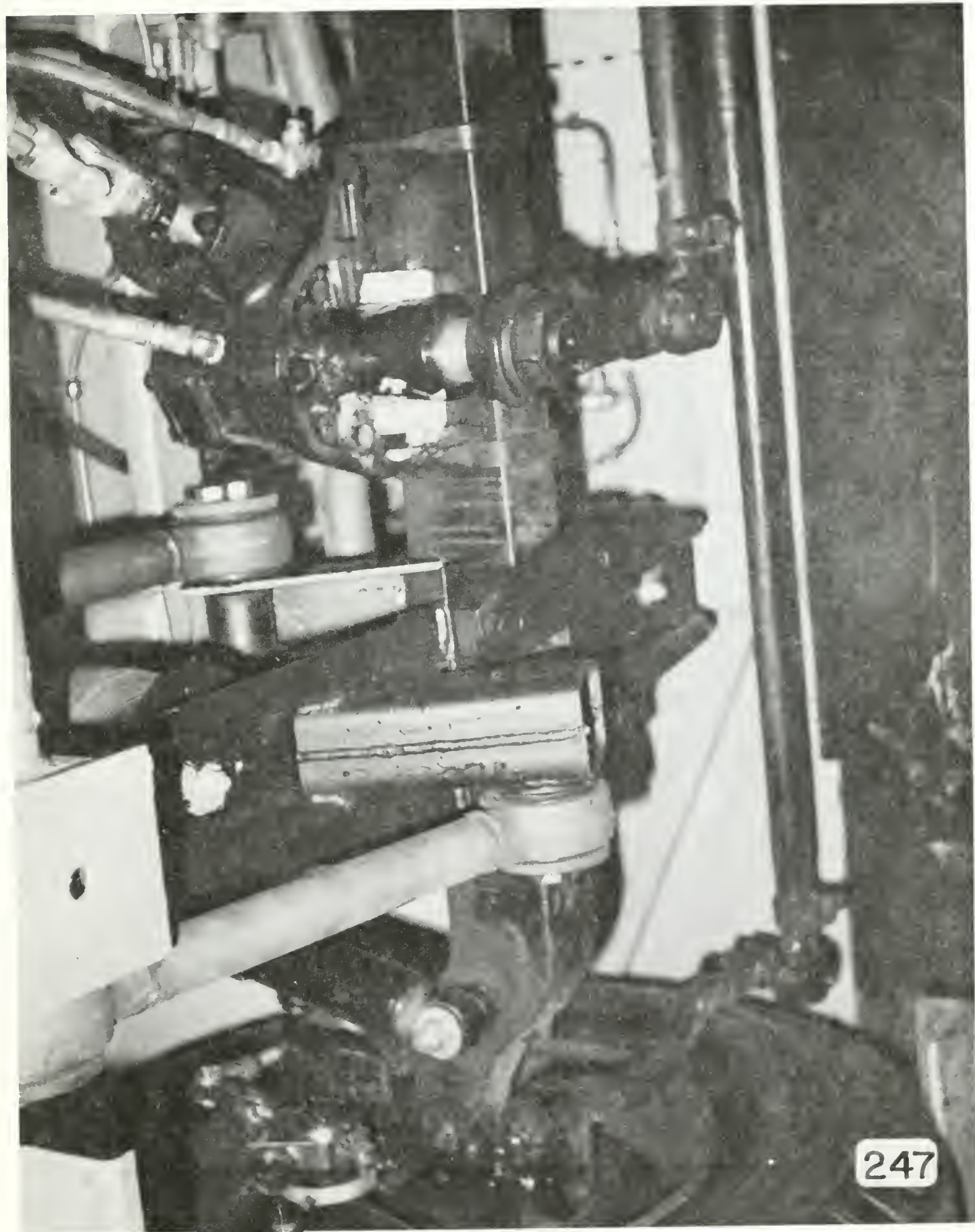
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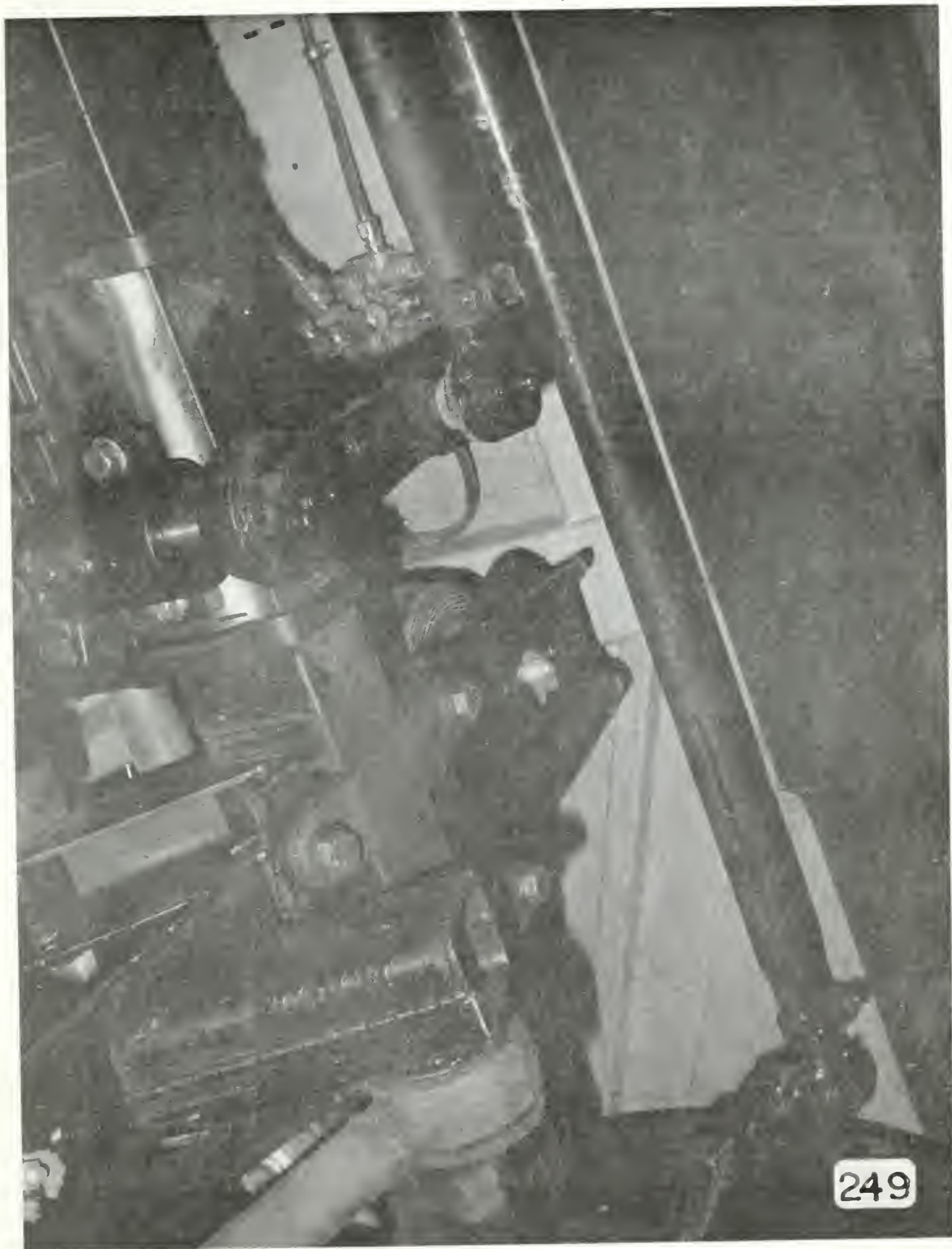


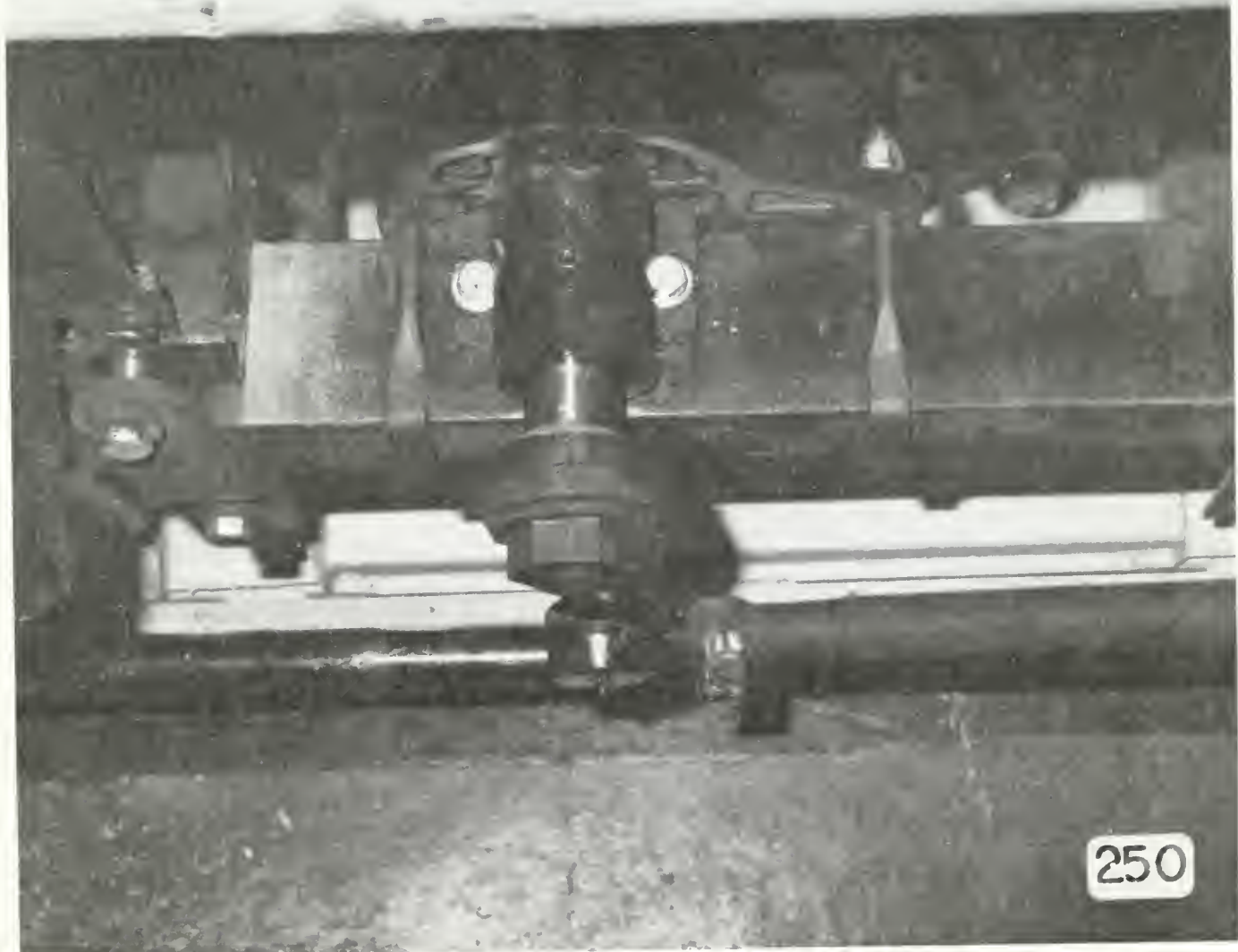
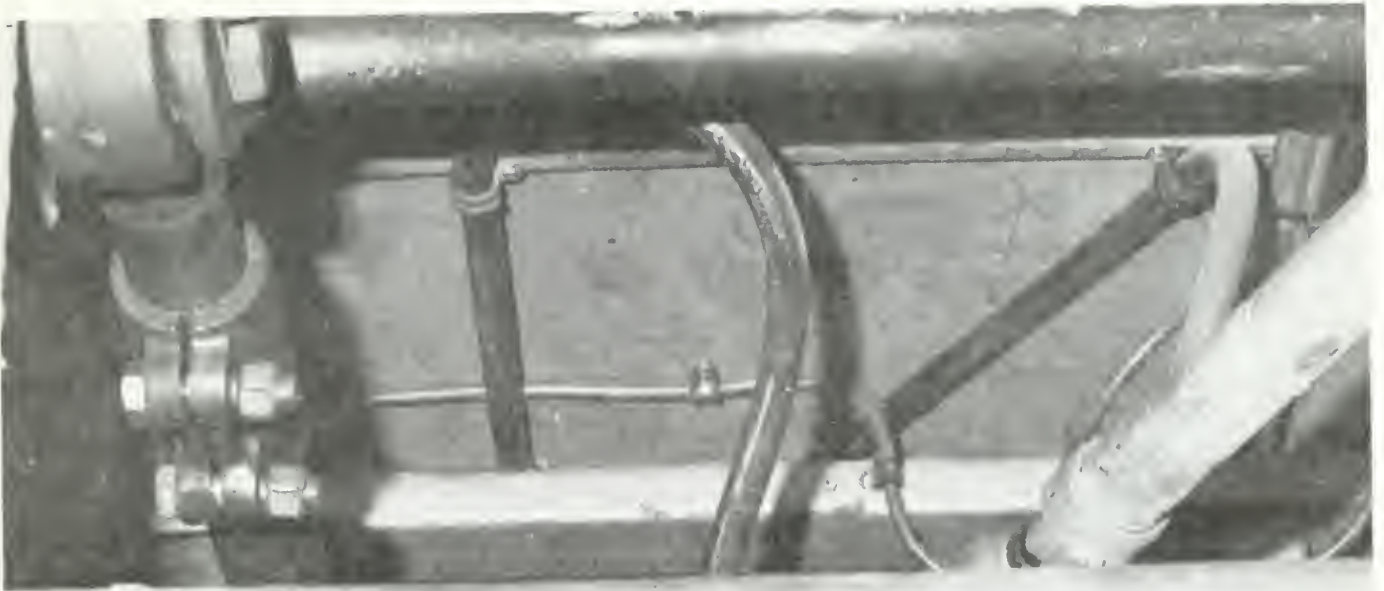


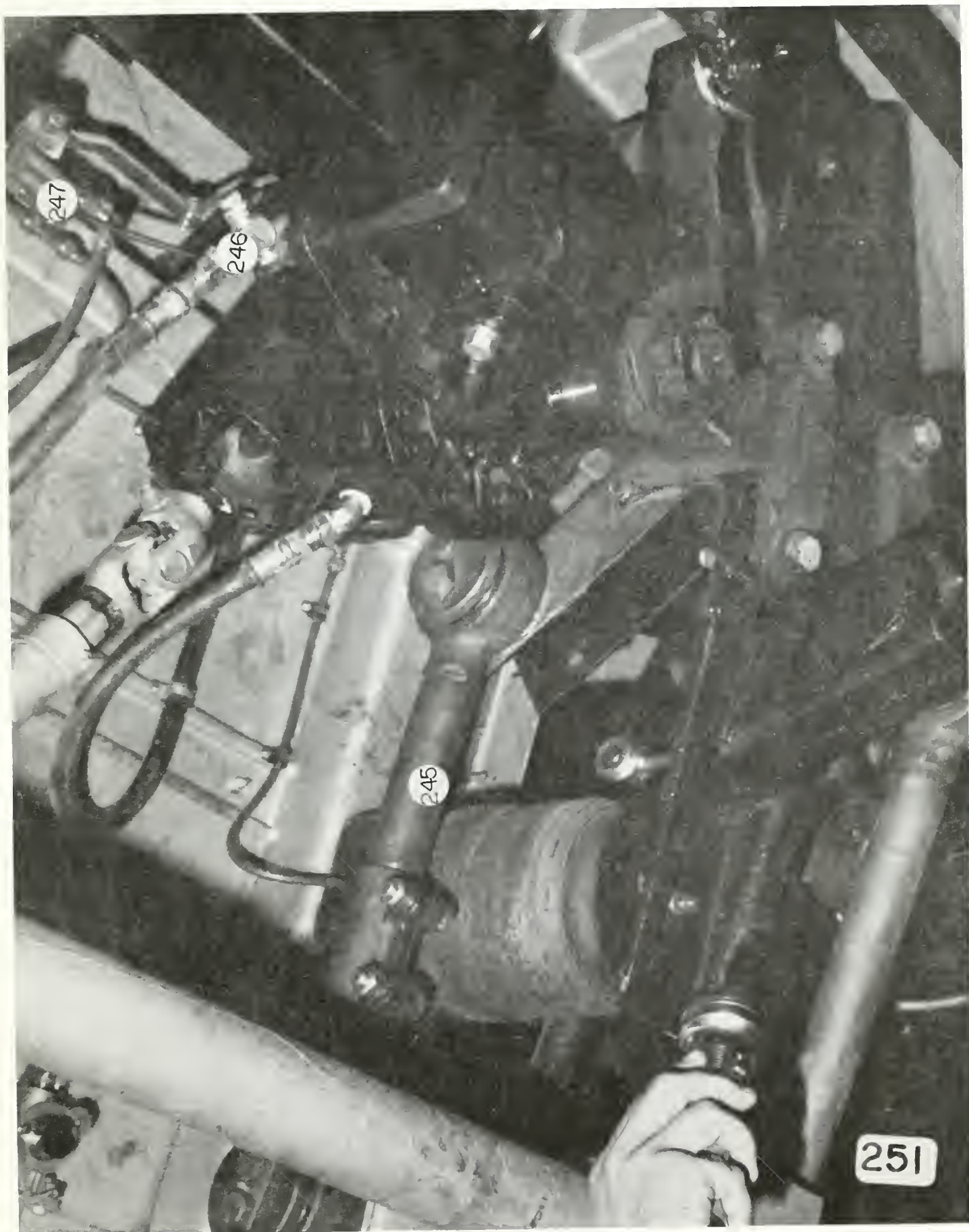


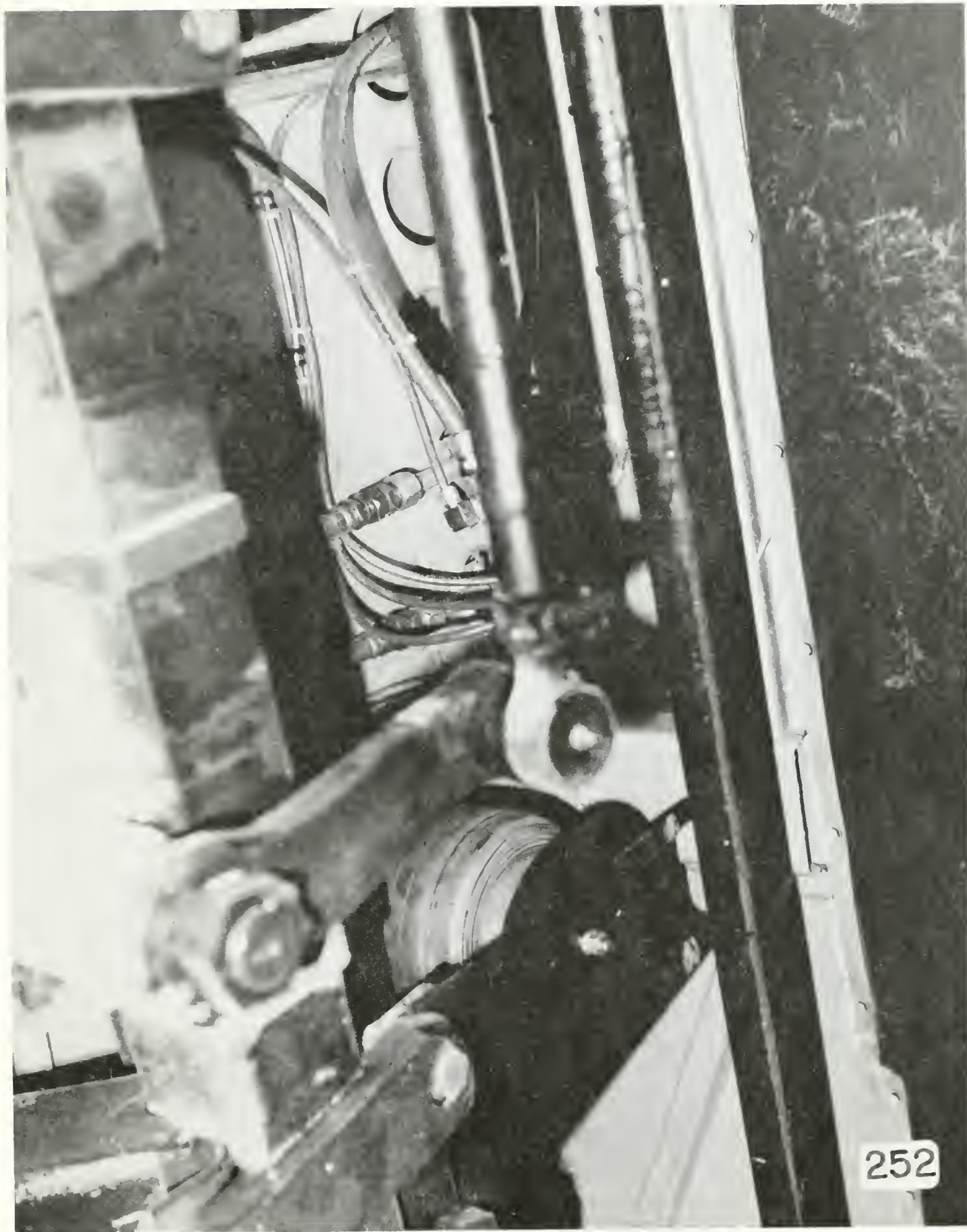


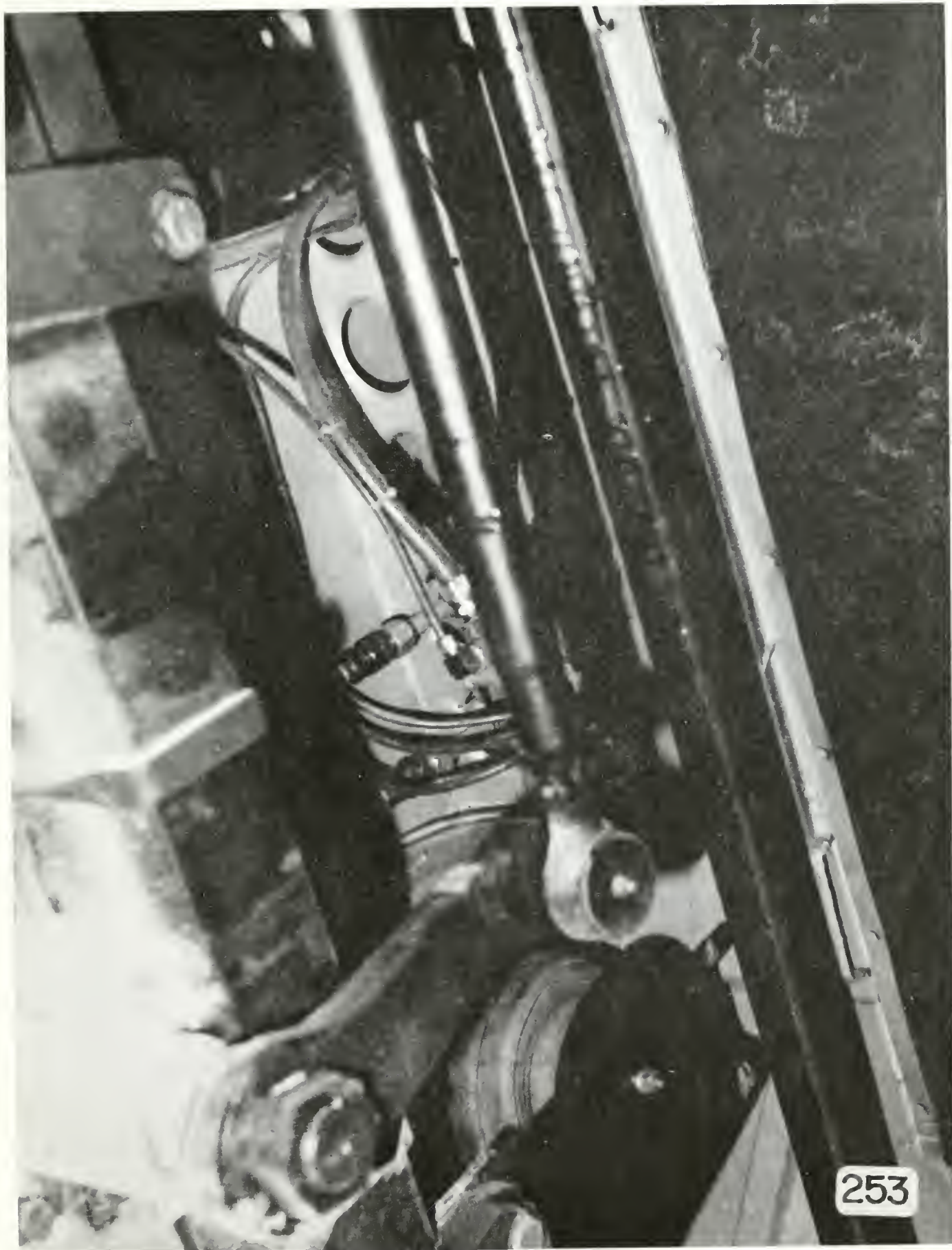


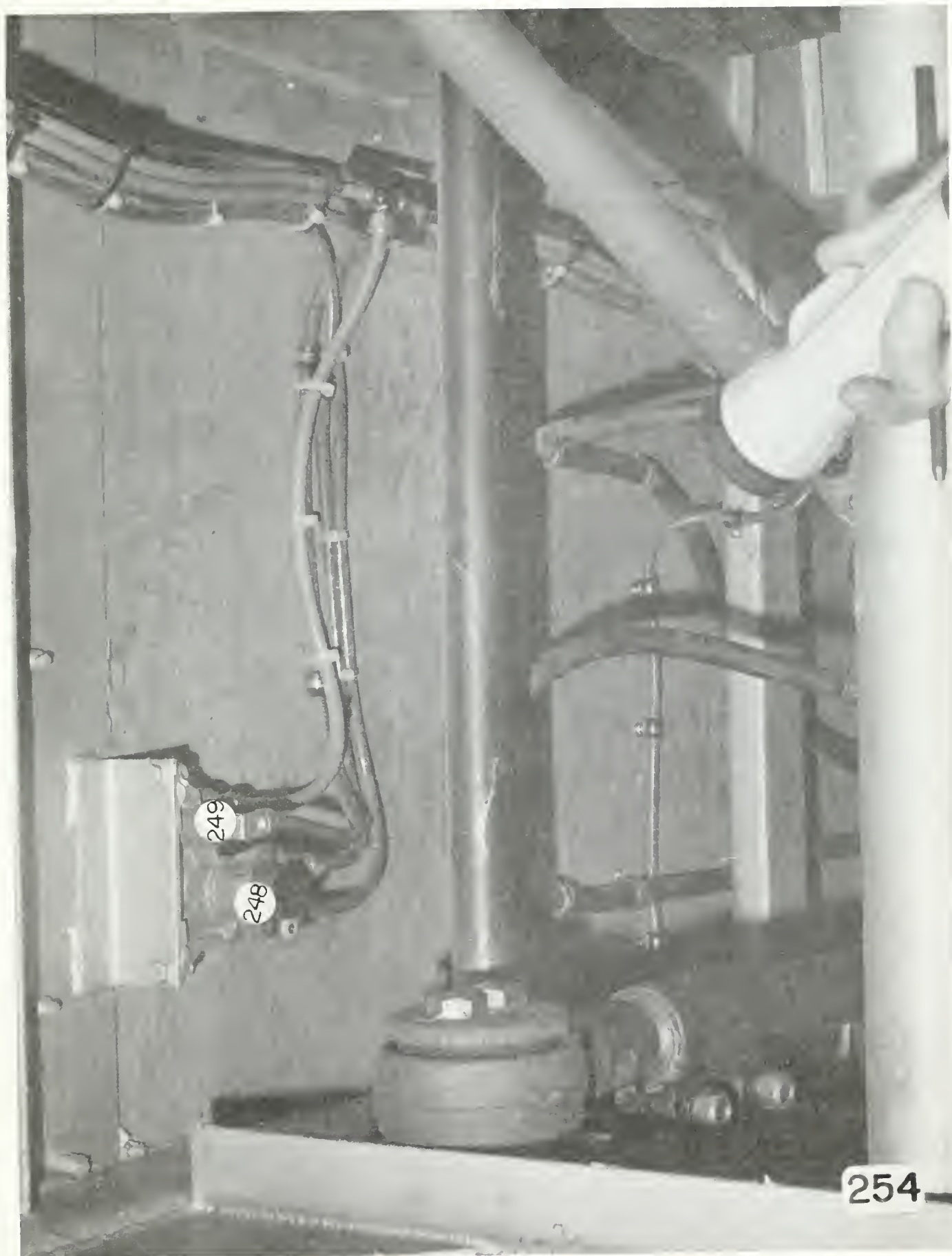


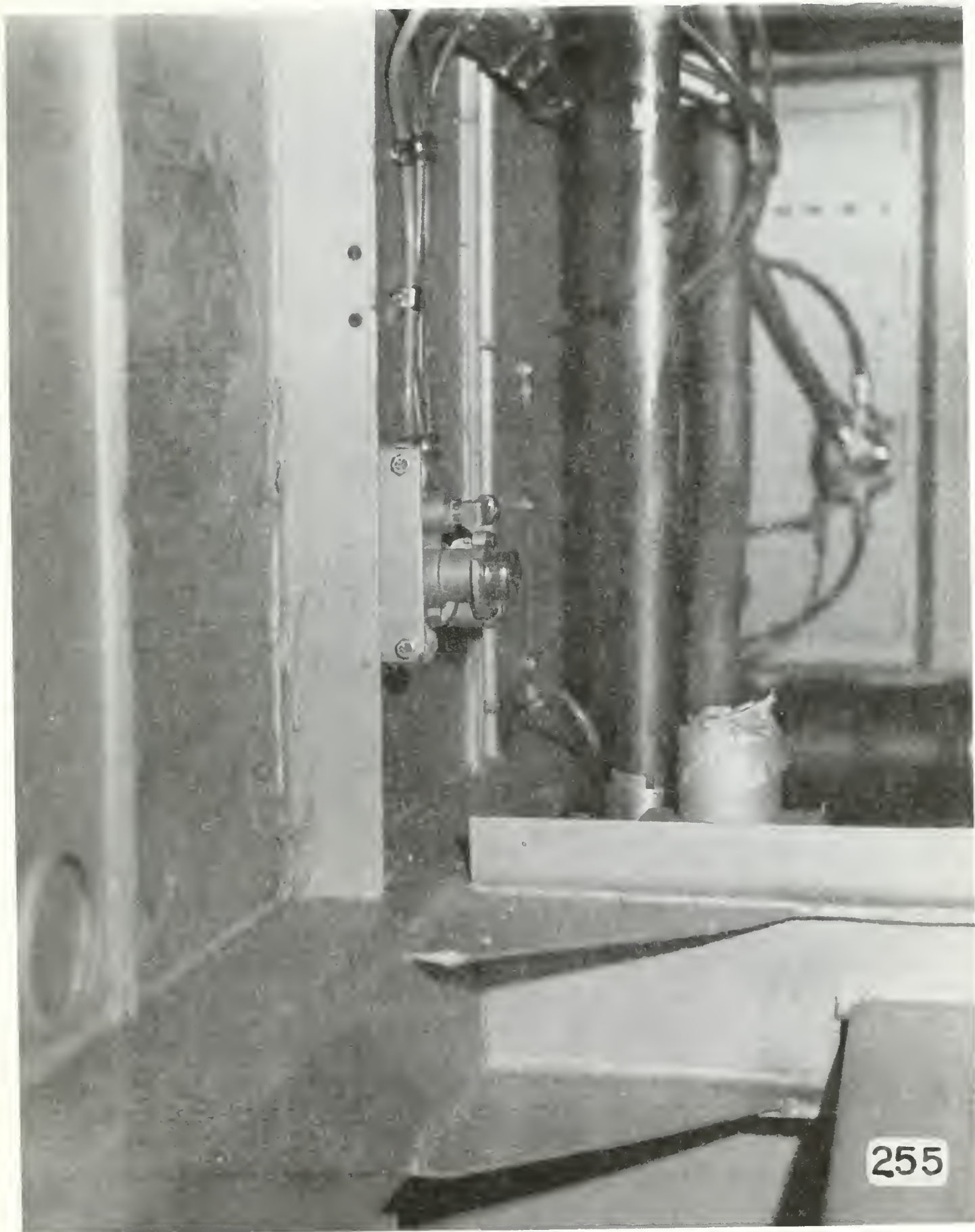


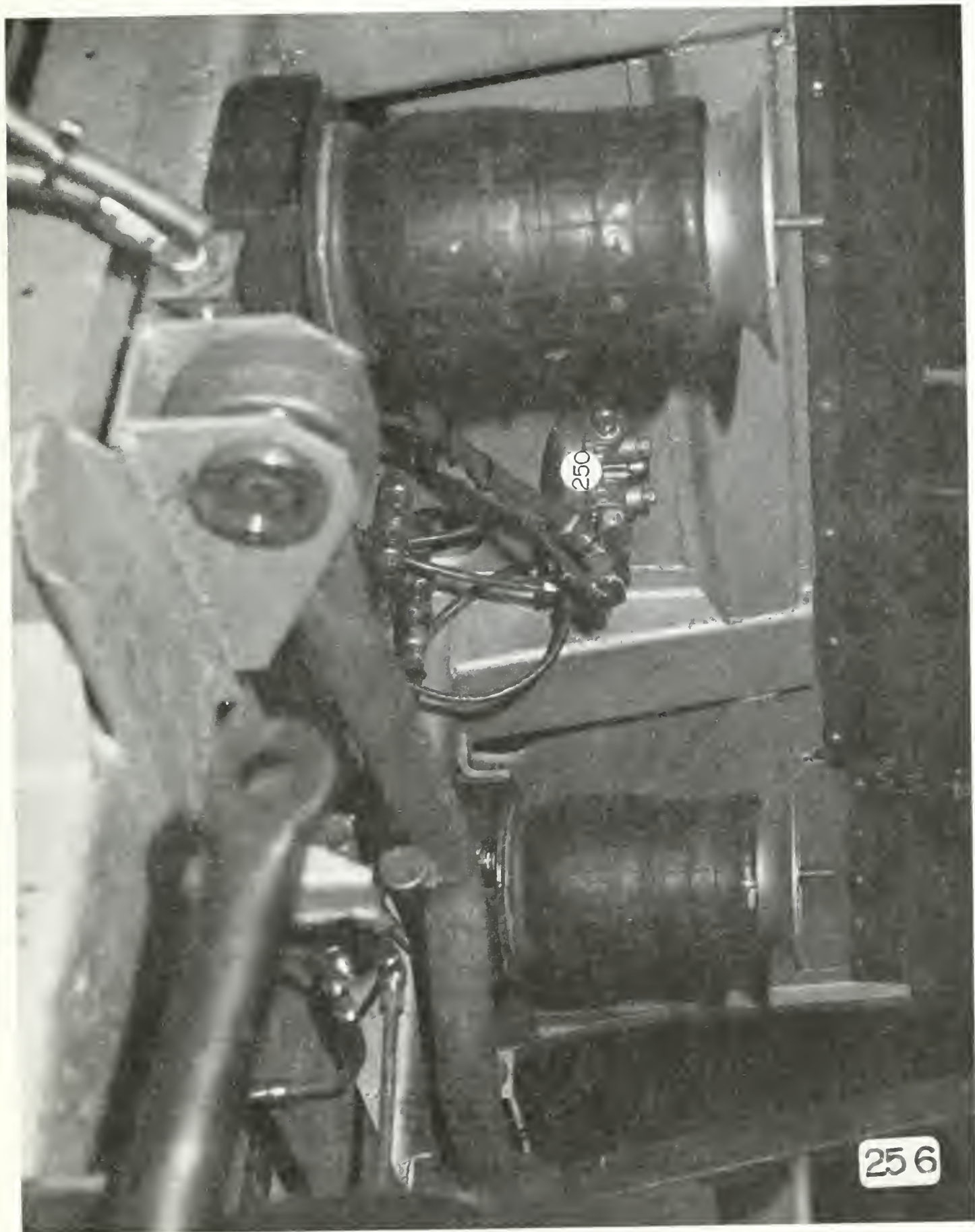


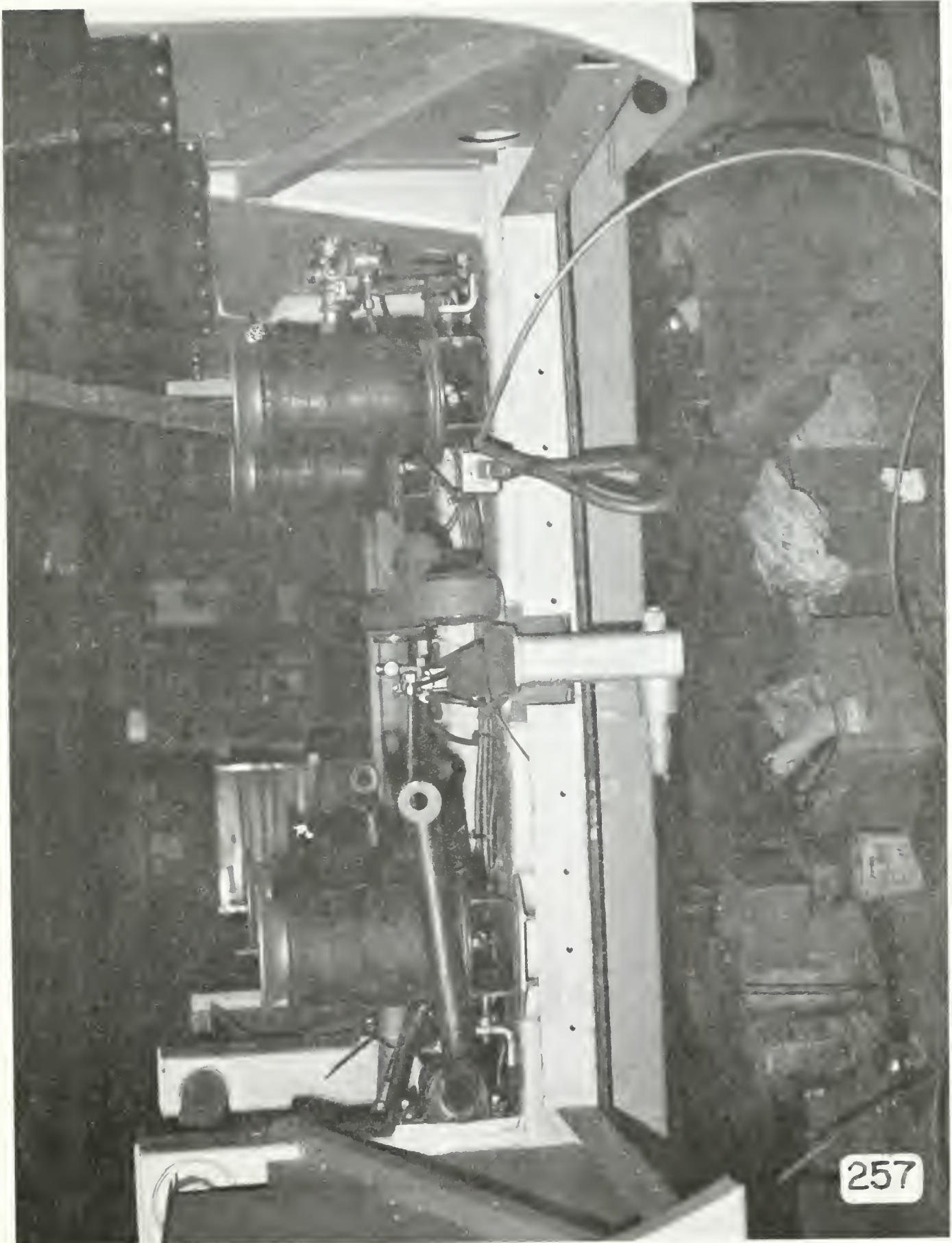




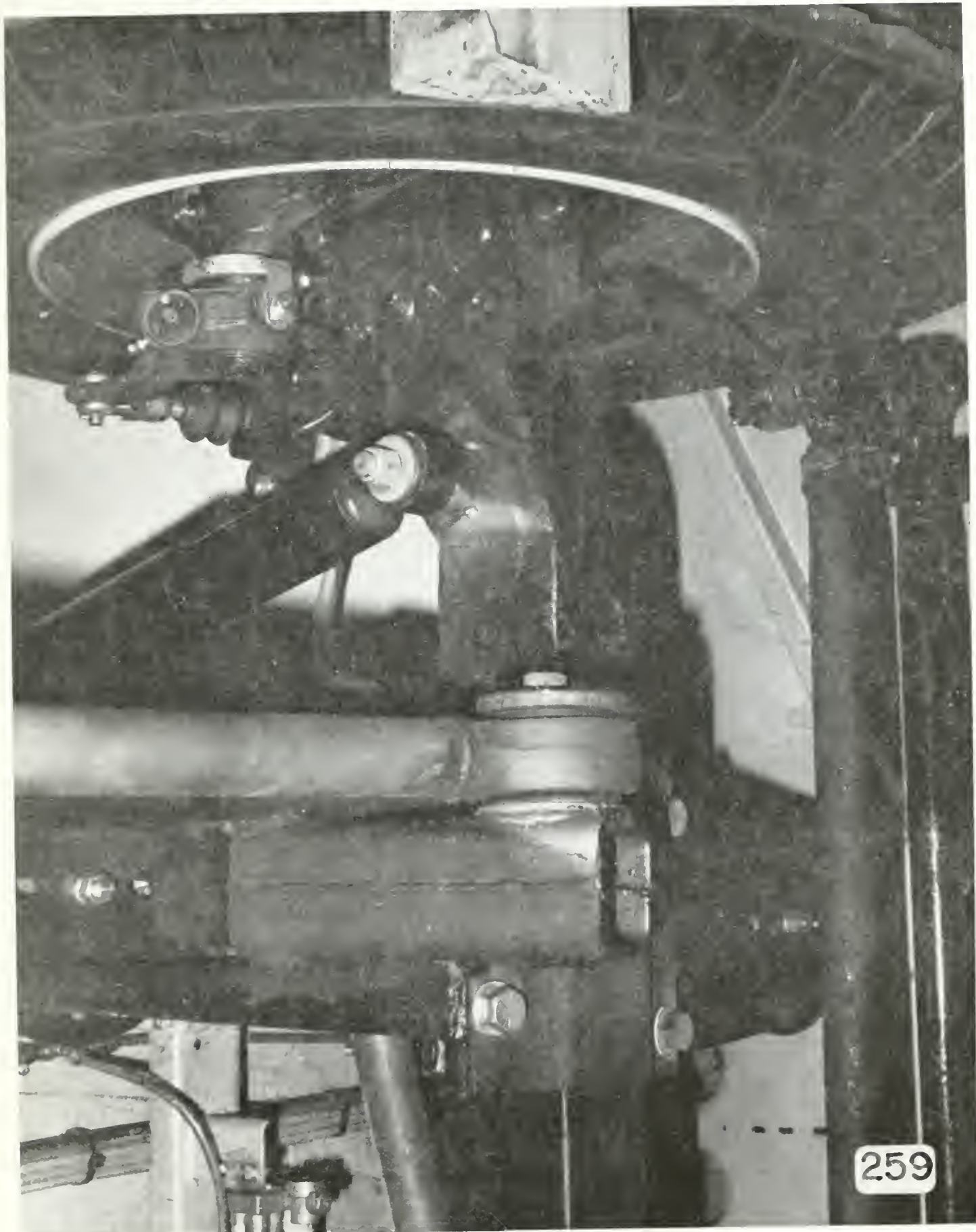








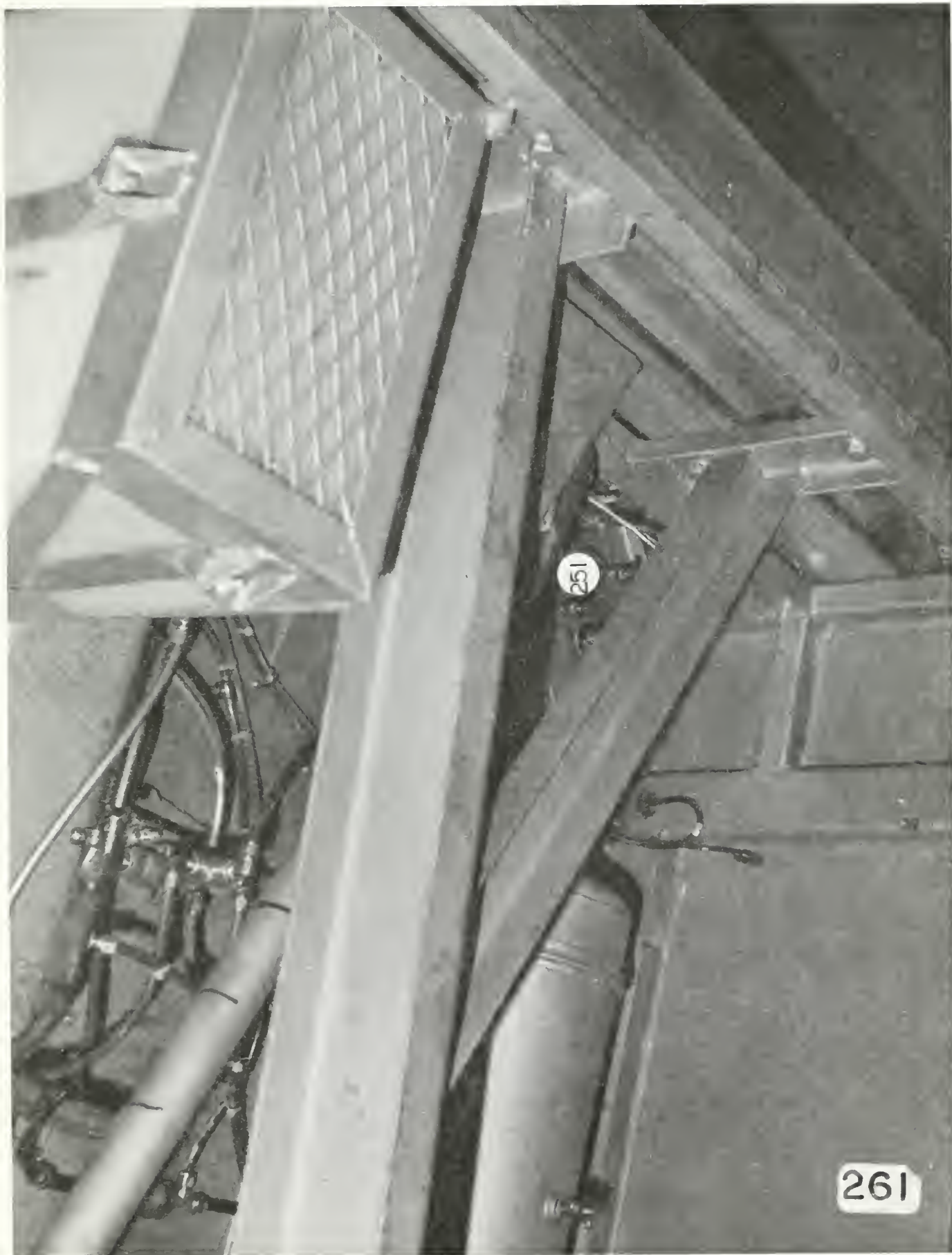




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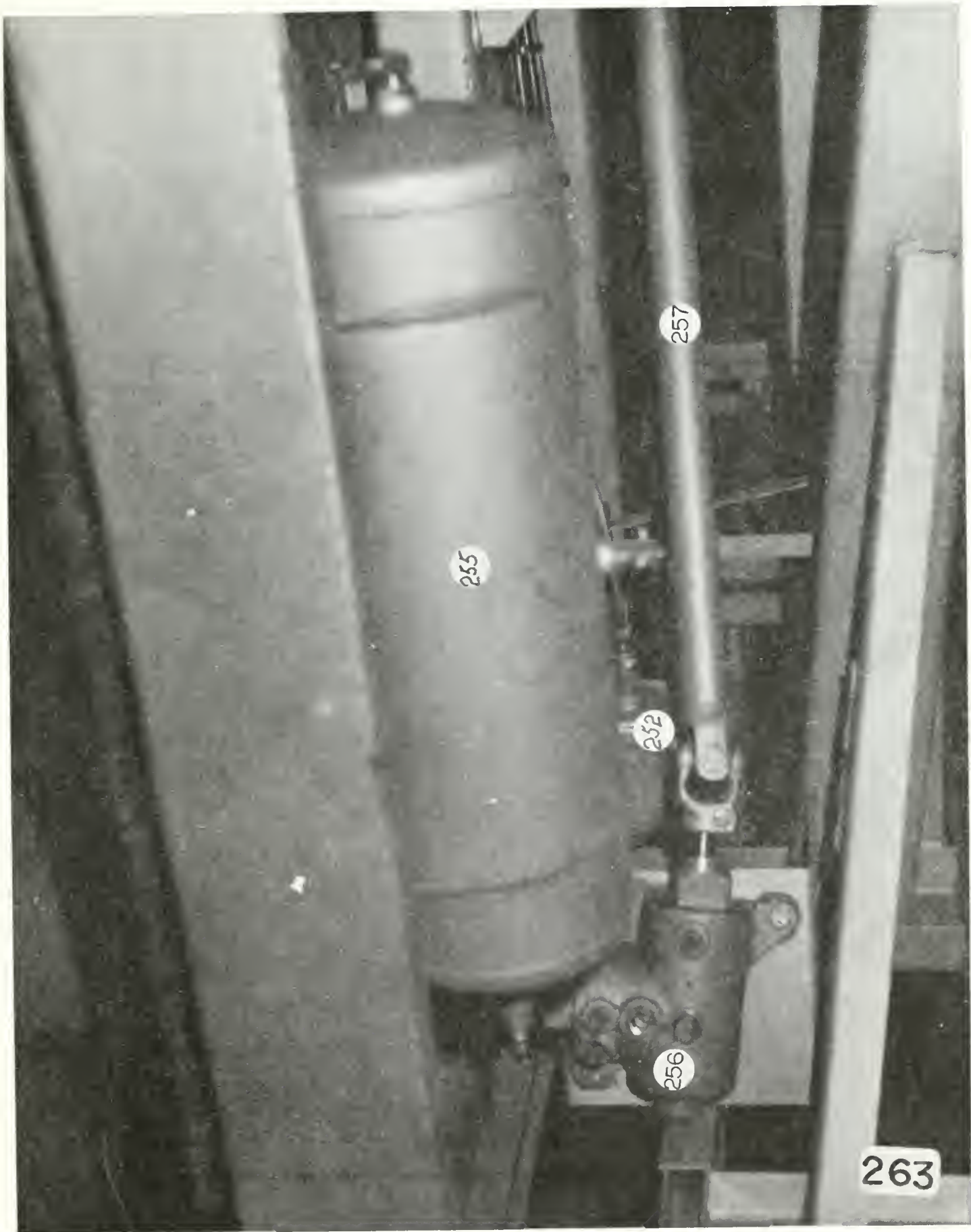


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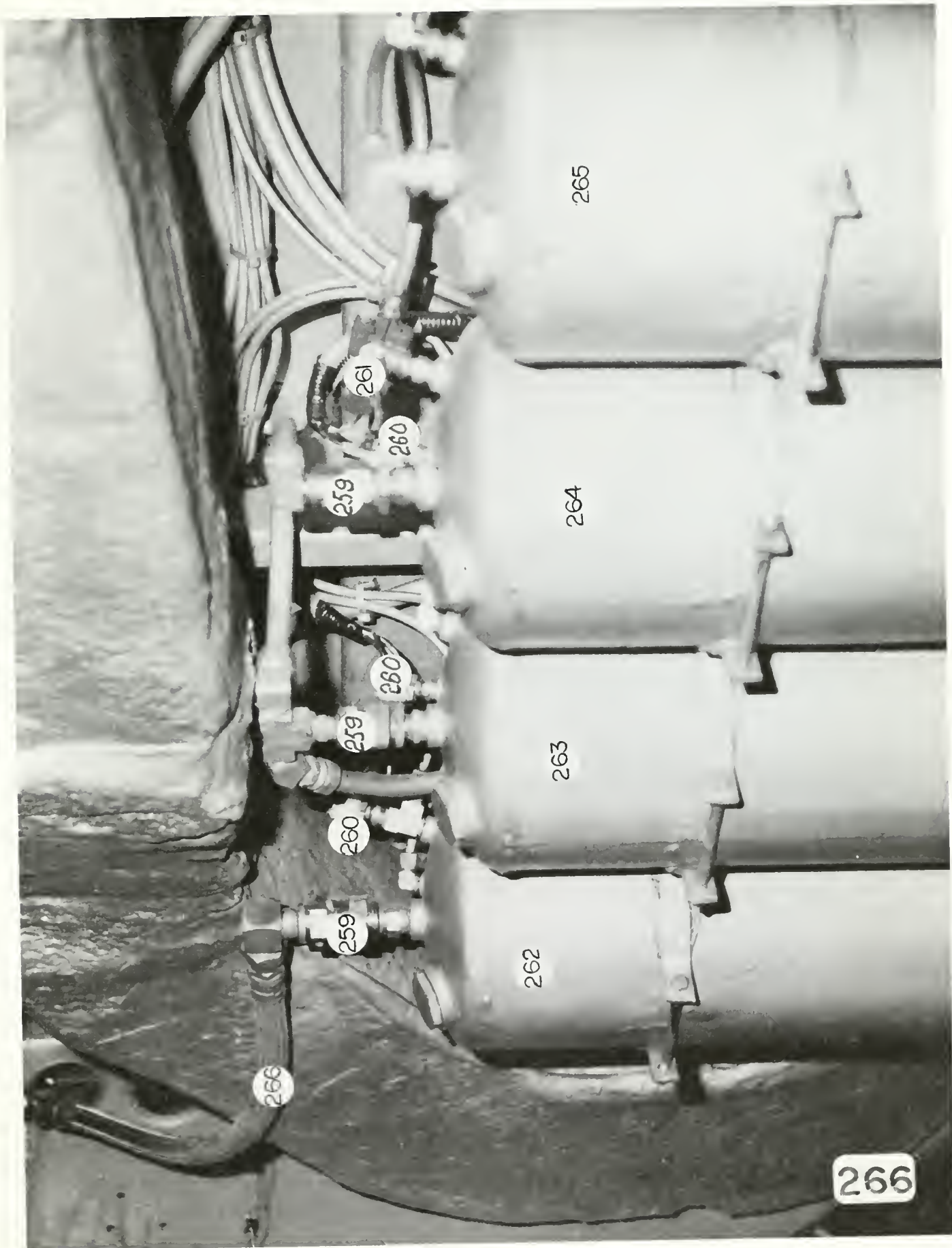
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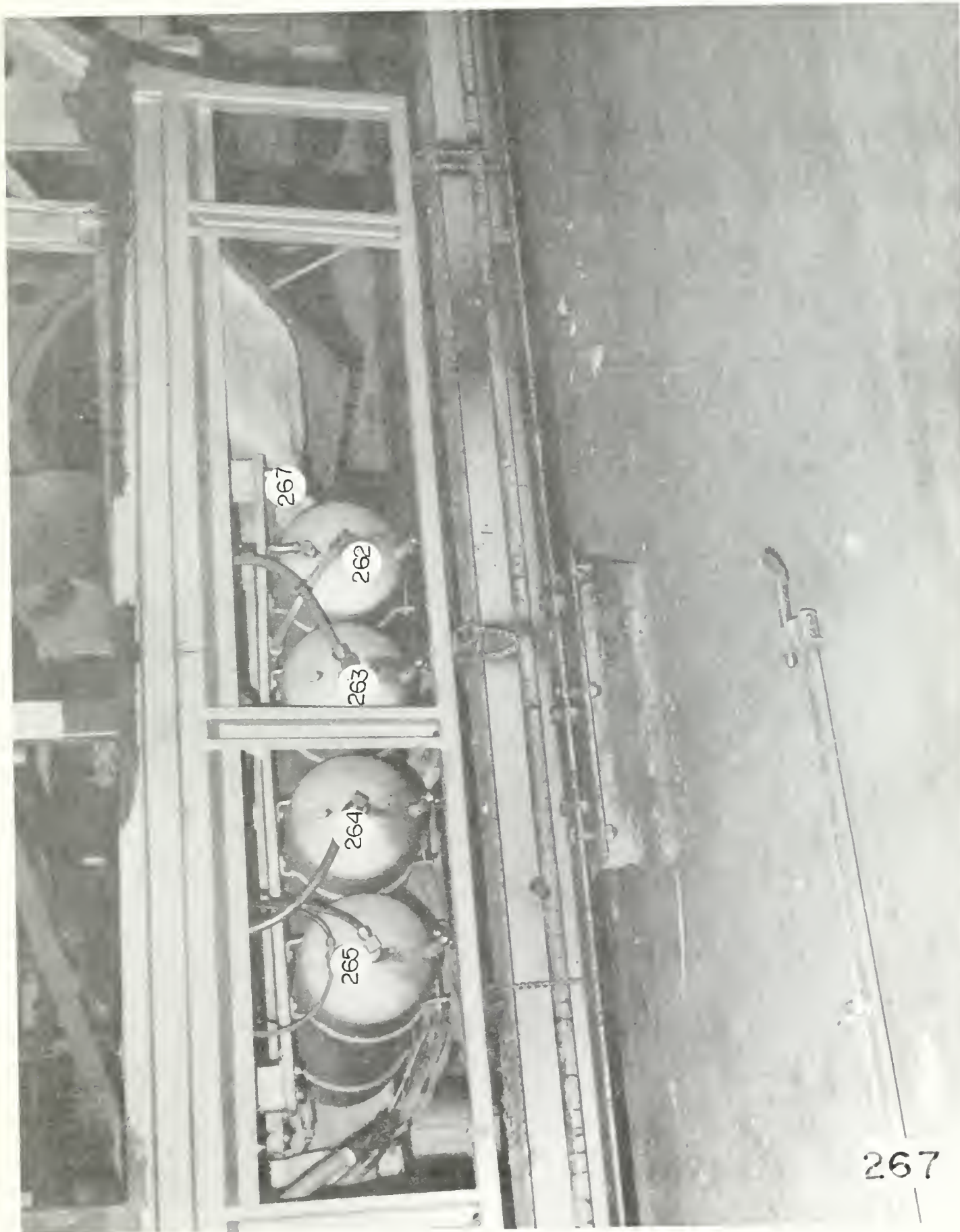
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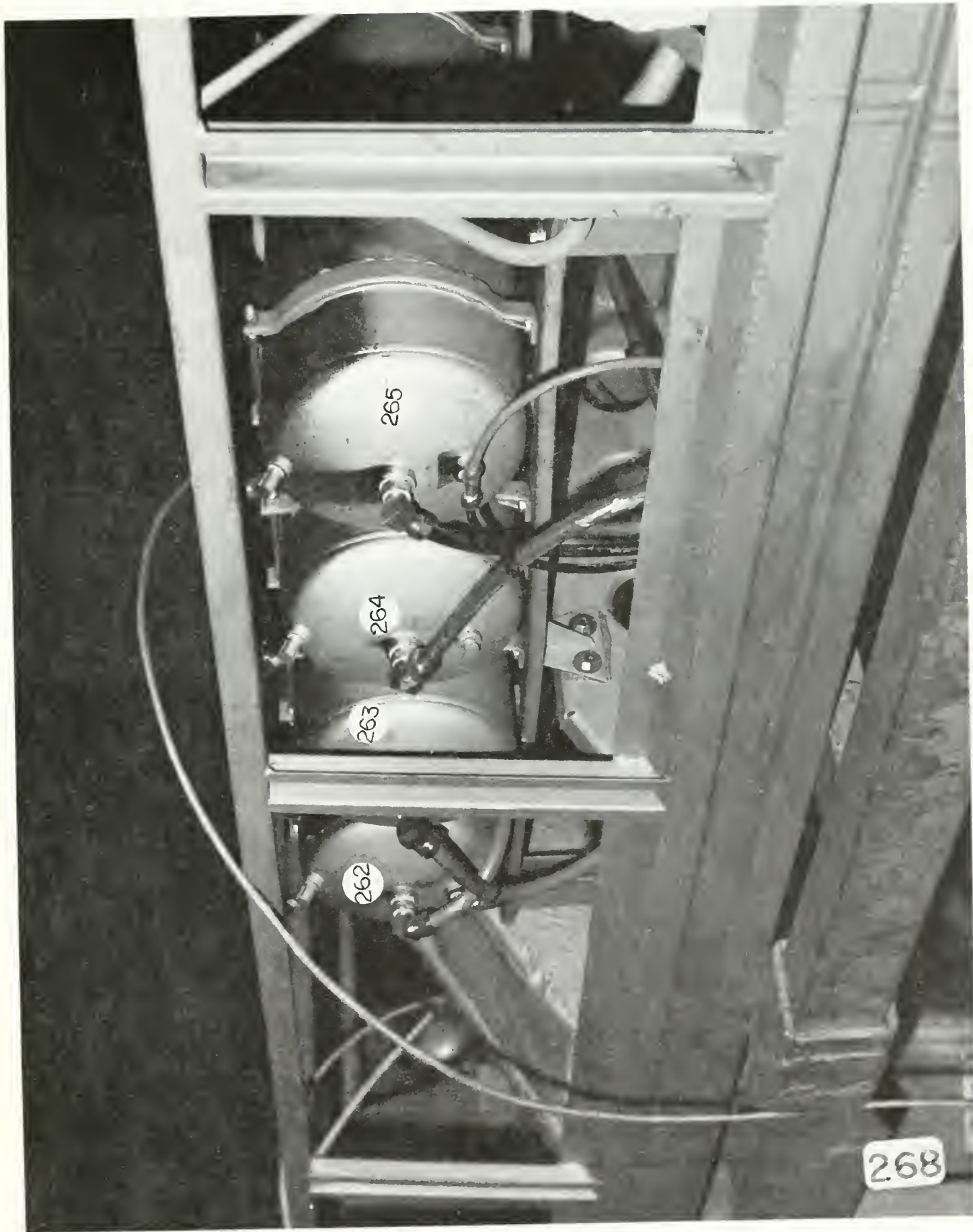
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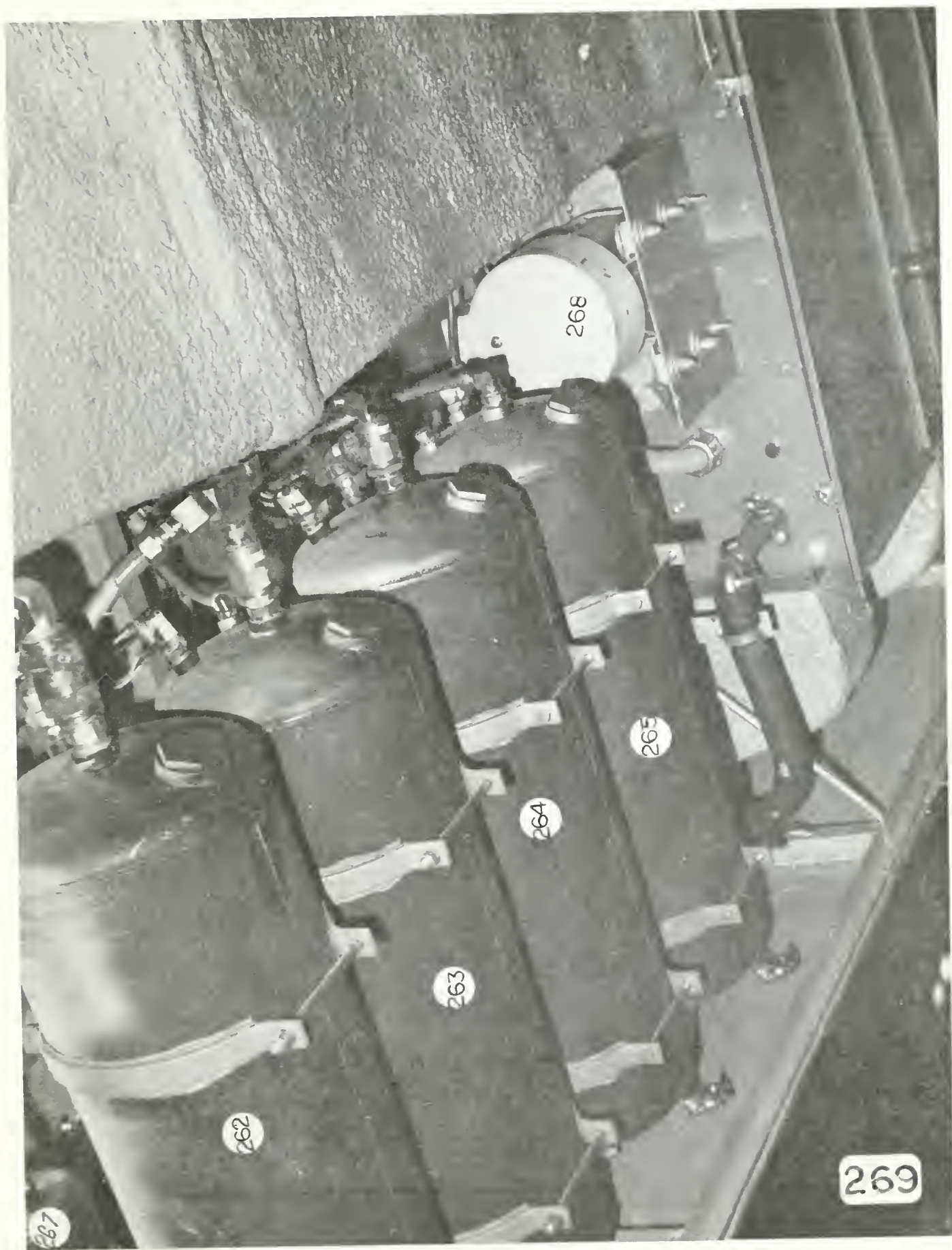
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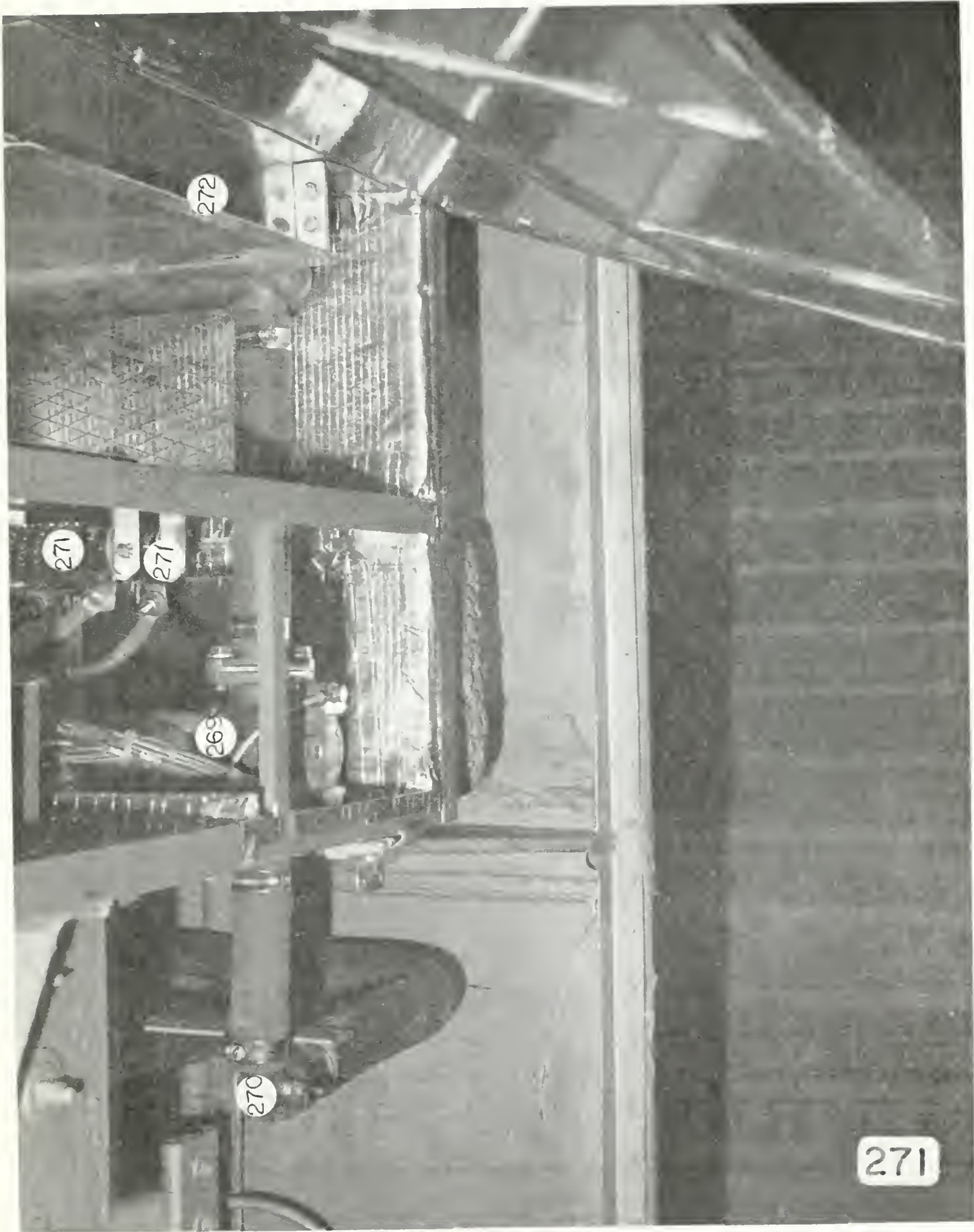


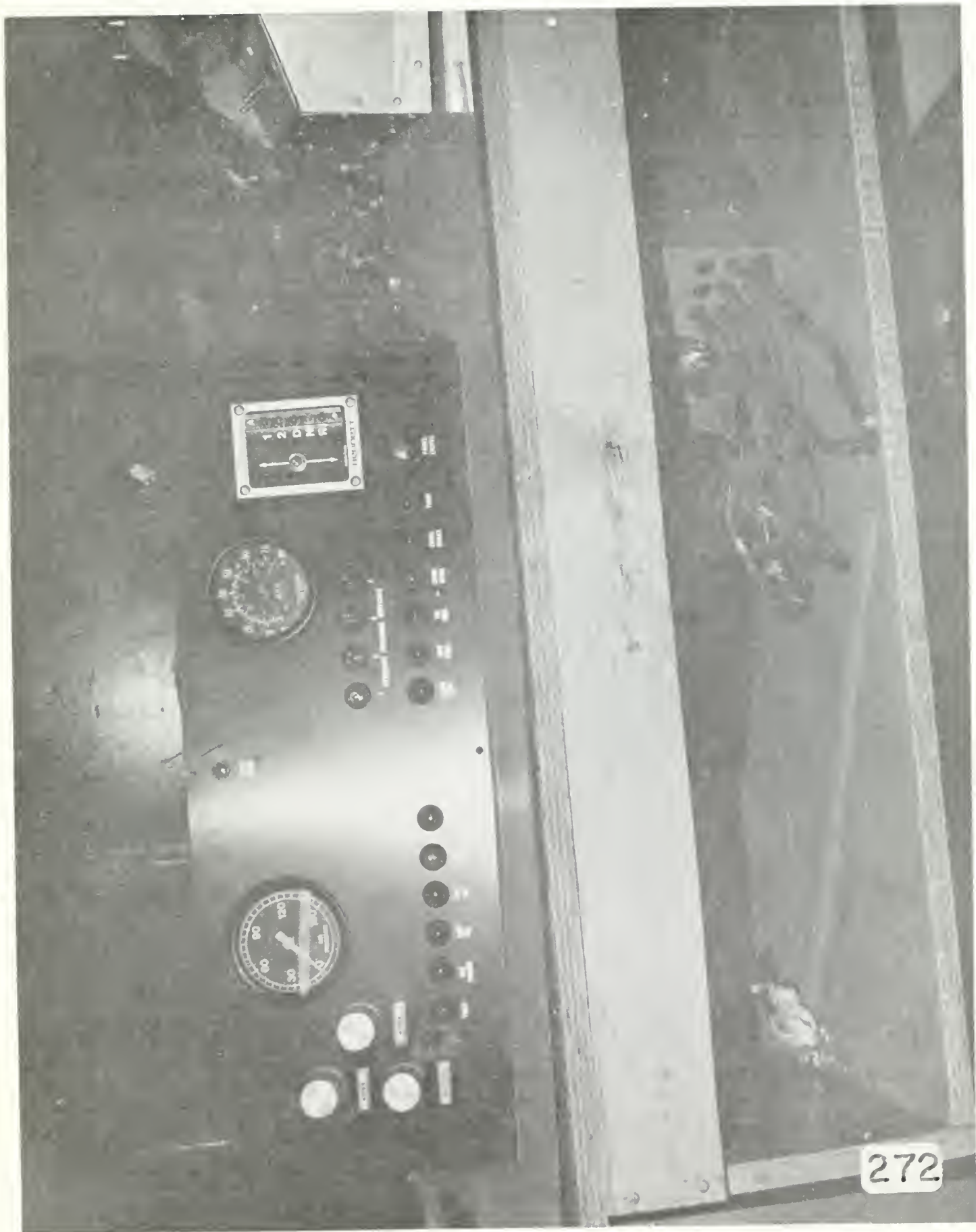


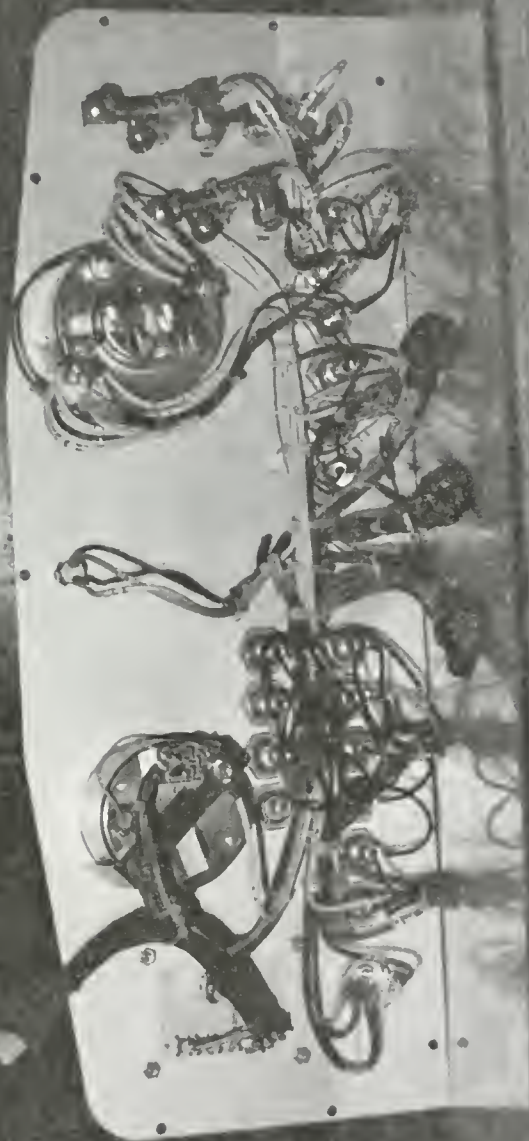




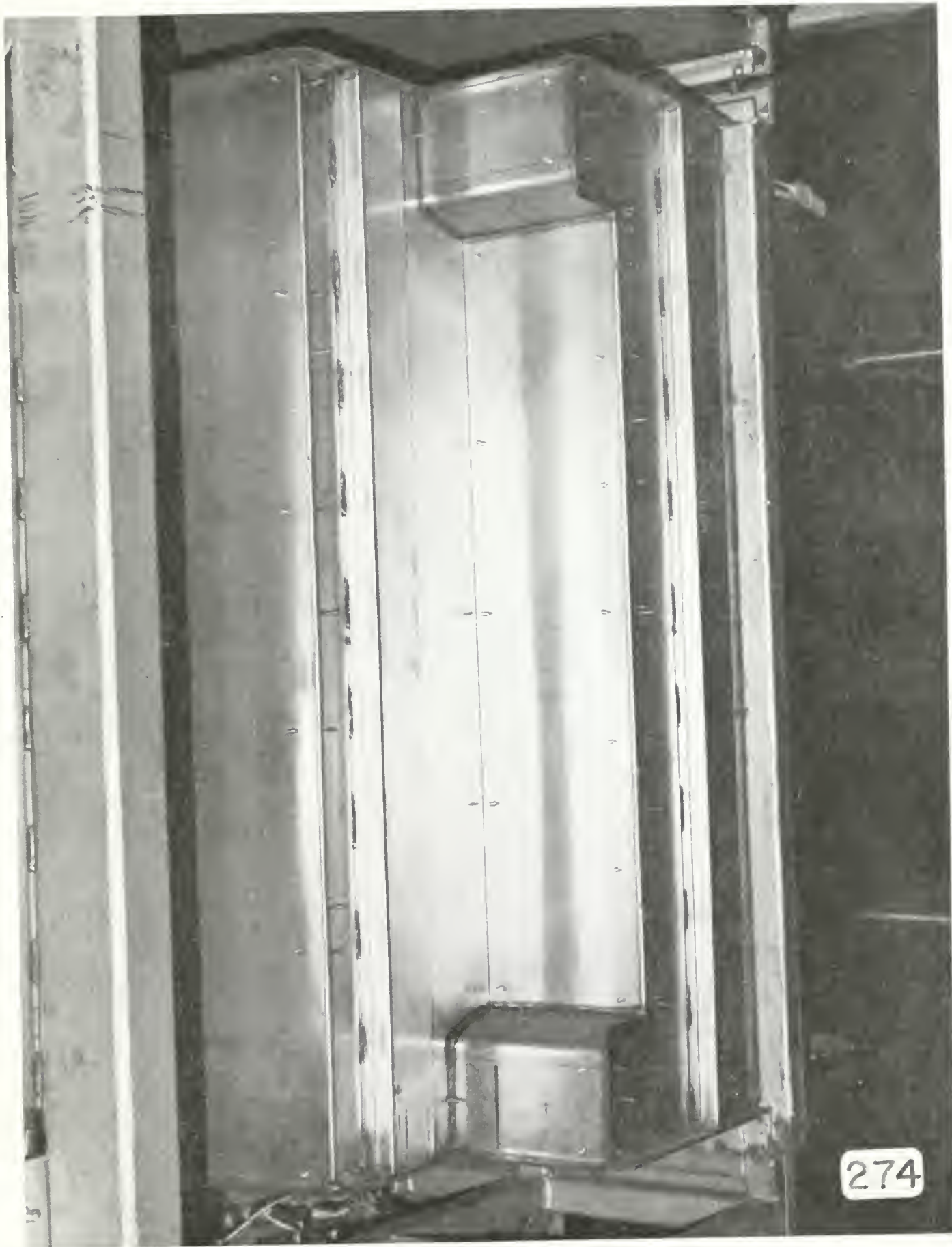
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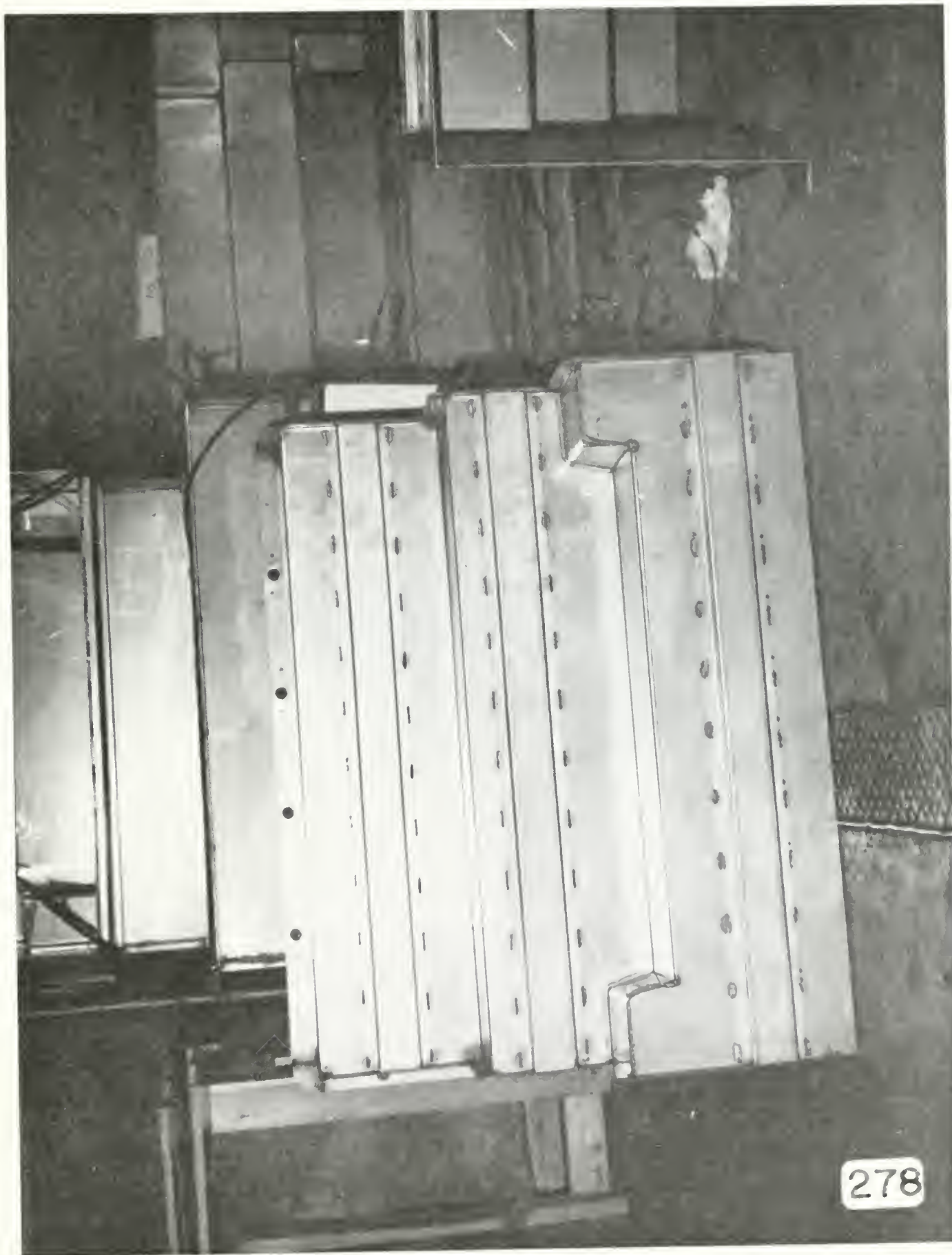
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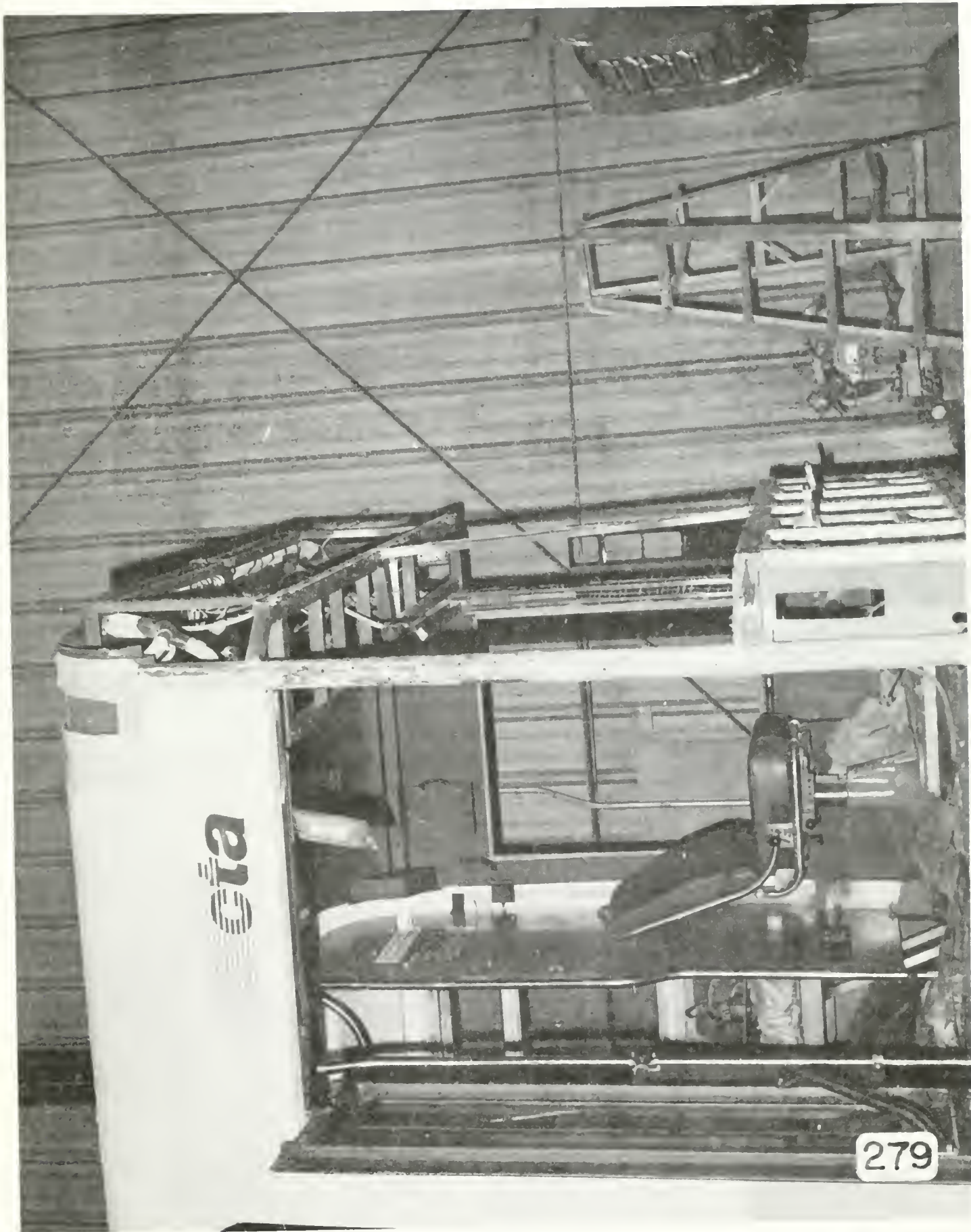


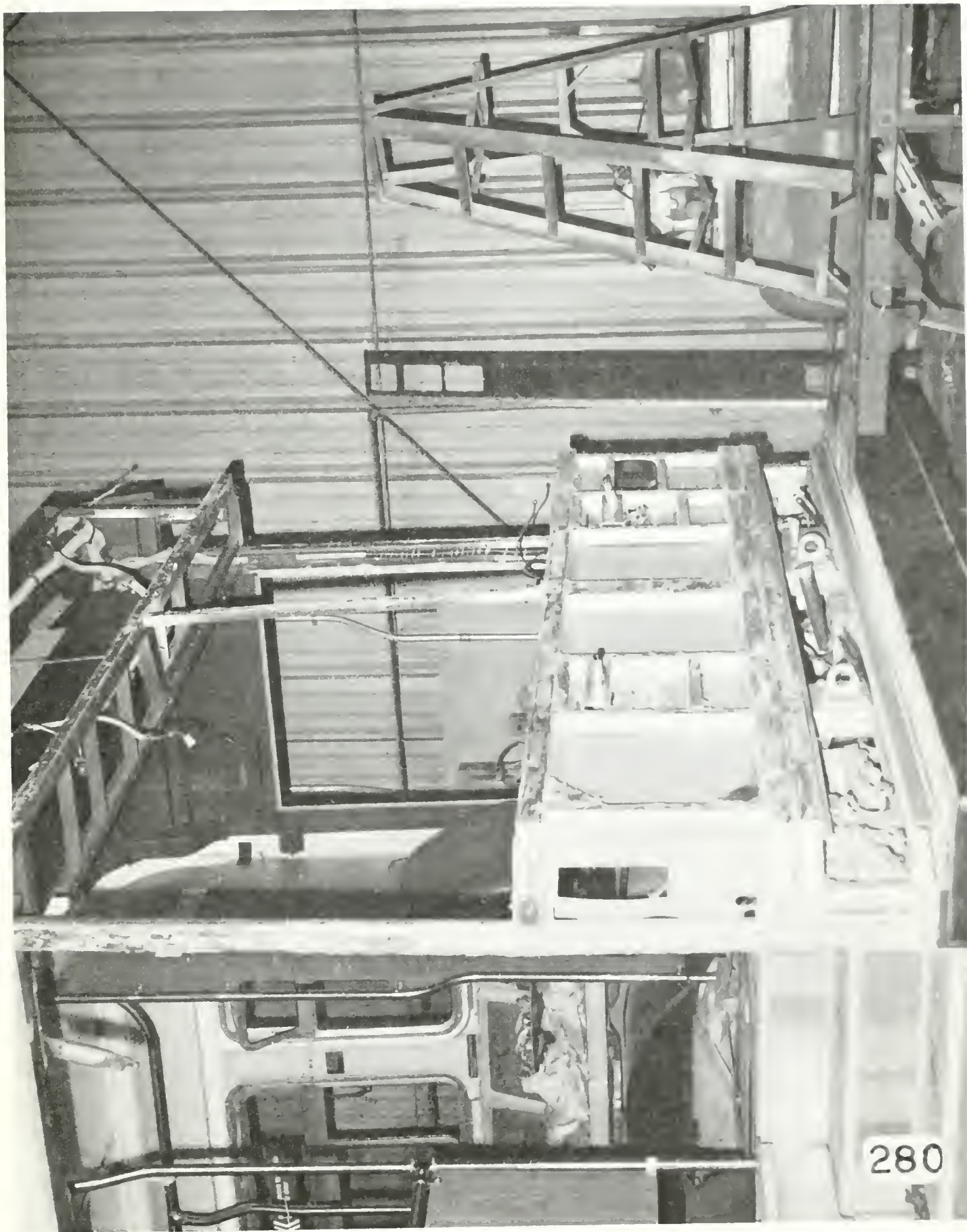
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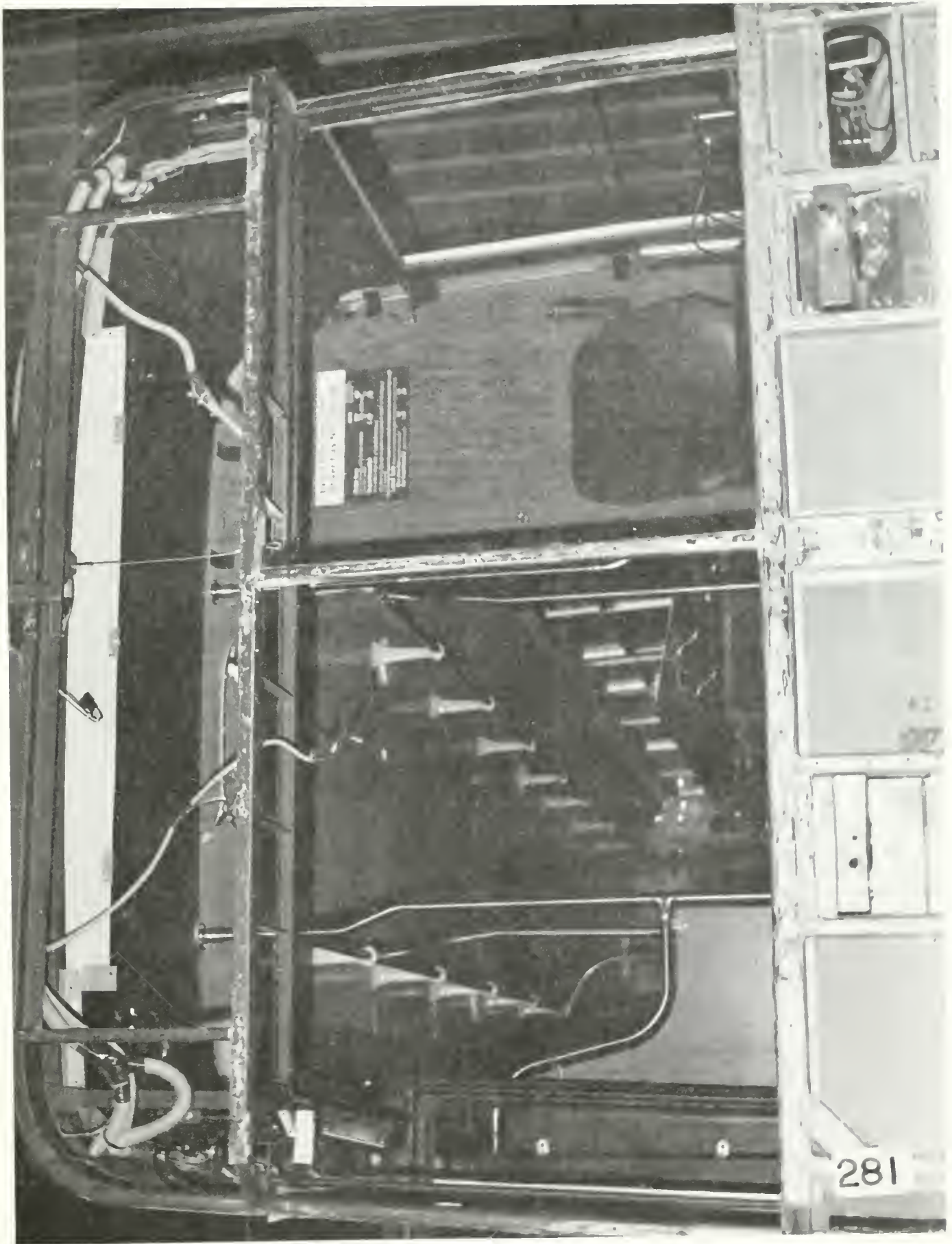


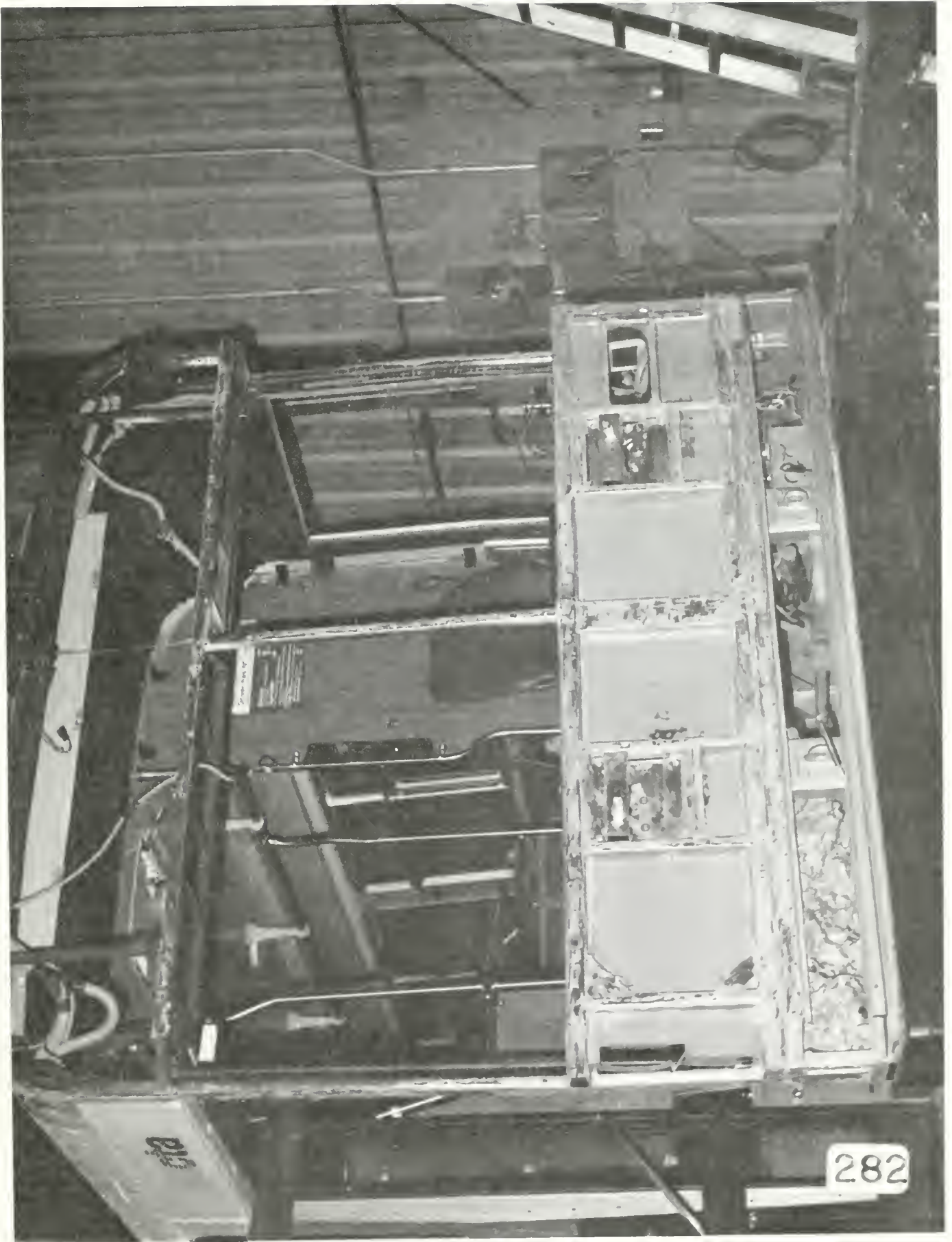


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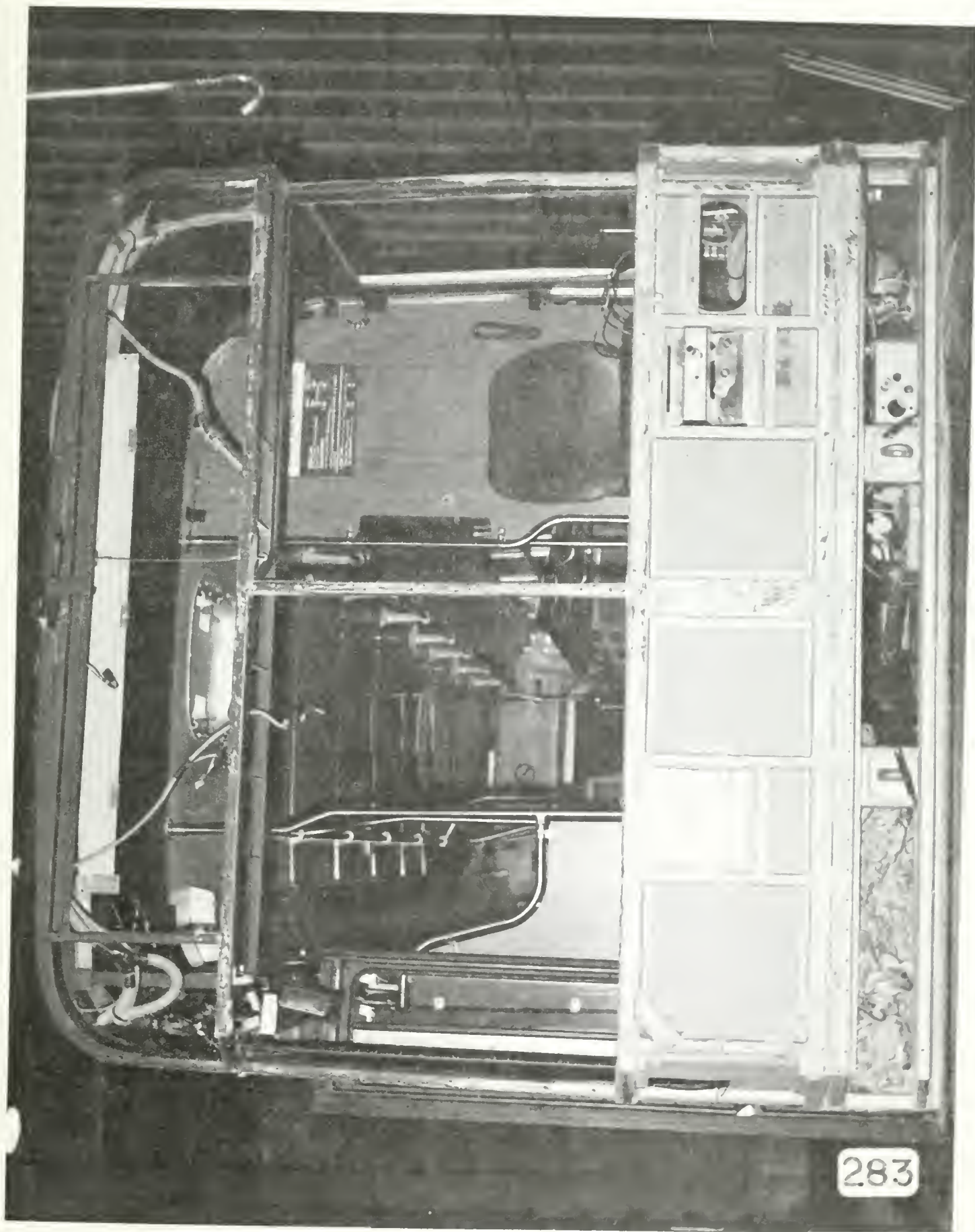


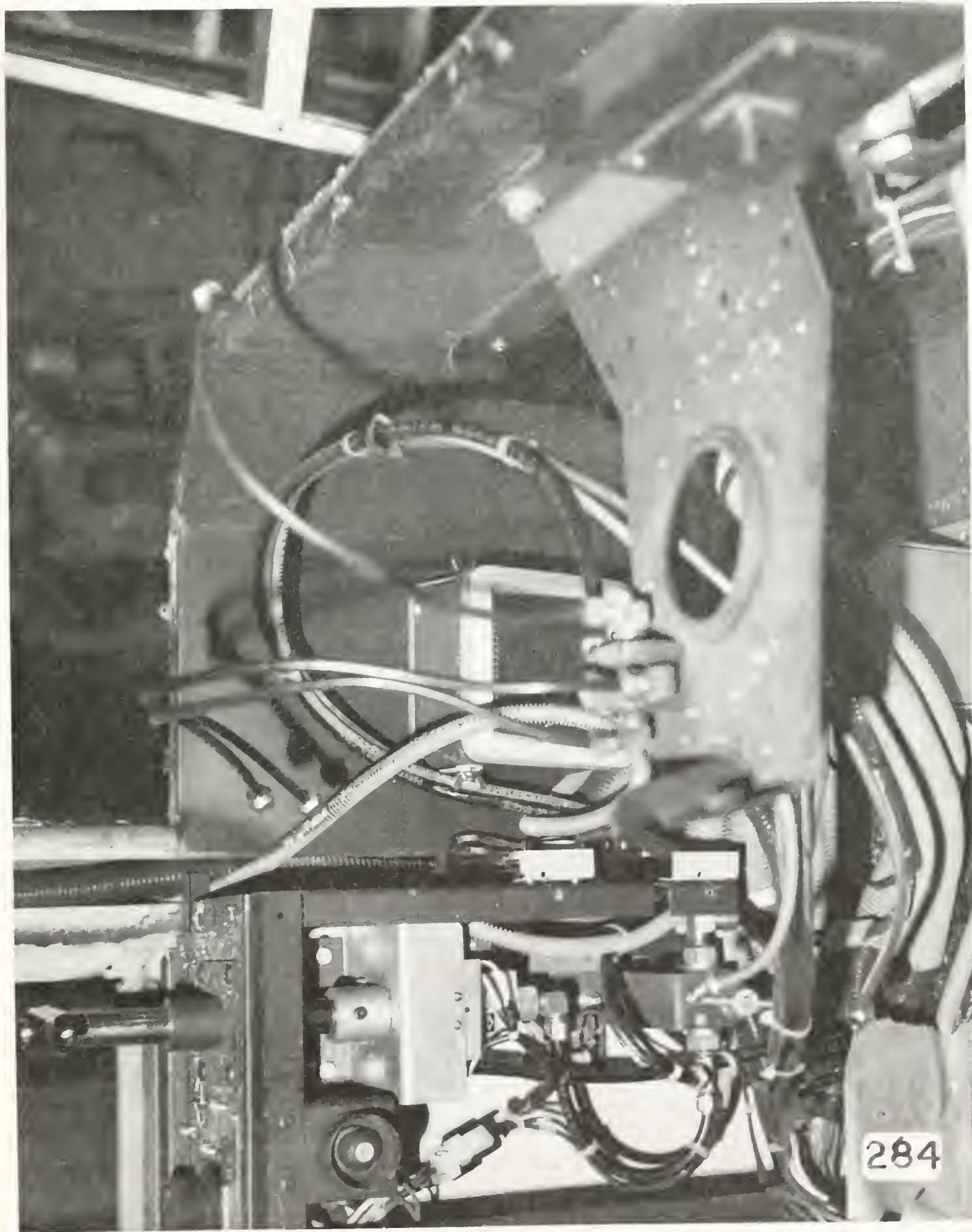






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